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ABSTRACT

For occupations demanding a great deal of skill, such as trades and crafts, apprenticeship has long been used as a training mechanism. A system requiring supervision under a master craftsman and some classroom theory, depending upon the level of job difficulty, an apprenticeship can involve training time from 2 to 7 years. Realizing the need for such training, Federal ad State laws have been initiated to increase the development and insure the proper operation of such programs. Presented in this report are legislative laws regulating registration, promotion, maintenance and service, completion requirements, veteran eligibility, and a list of those trades classified as apprenticeable by the State of New York. Appendixes listing program data on existing apprentice training and instruction are included to facilitate further comprehension. (SN)

ED 070834

New York State
Education Department
Department of Labor

VT018029

Registered Apprenticeship Training
A Joint Report

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ED 070834

REGISTERED APPRENTICESHIP TRAINING IN NEW YORK STATE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A JOINT REPORT
by
The New York State Department of Labor
and
The New York State Education Department

May 1972

THE UNIVERSITY OF THE STATE OF NEW YORK

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FOREWORD

This third joint report of the Department of Labor and the Education Department describes the nature, administration, and extent of registered apprenticeship training in New York State.

Part I presents a brief historical overview of the evolution of the apprenticeship system and a description of what apprenticeship is today. This information should be helpful to local education people and others who assist youth in choosing vocational goals.

Part II summarizes legislation and describes the roles and responsibilities of the various State and Federal agencies concerned with apprenticeship. This part should be of value to potential program sponsors in identifying the nature of services provided by the governmental agencies.

Part III contains the 1970 program data on apprentices, programs, and related instruction in addition to selected data for the decade of the sixties. These tables should provide a valuable source of information for program administration at all levels of government. The statistics on apprentices and programs were provided by the Labor Department's Division of Research and Statistics, and those on related instruction were obtained by means of a special survey conducted by the Department's Apprentice Training Section and the Research Coordinating Unit of the State Education Department.

The appendixes contain Article 23 of the Labor Law, the list of apprenticeable trades, a work processes sample and related instruction outline, and a report on "Related Instruction for Apprentices Reported in 1967 as Completing Training" issued by the Division of Research and Statistics as Special Labor News Memorandum 136, dated October 20, 1970.

HIGHLIGHTS OF STATISTICS ON REGISTERED APPRENTICESHIP IN NEW YORK STATE

- The number of apprentices in training at the end of 1970 was 22,856 - a substantial increase over the 1960 level of 16,316.

- The 22,856 apprentices were enrolled in 4,735 programs; 57.2 percent of these apprentices and 31.8 percent of these programs were located in the New York metropolitan district.

- Joint union-employer apprenticeship committees sponsored 26.5 percent of the programs, which enrolled 70.6 percent of the apprentices. The remaining apprentices were in programs sponsored by employers without joint union participation.

- Programs in the construction trades enrolled 51 percent of the apprentices, service and repair trades 19 percent, printing trades 14 percent, metal manufacturing trades 13 percent, and other manufacturing trades 3 percent.

- A total of 1,536 programs started training apprentices and 1,313 programs terminated training during 1970.

- A total of 9,234 apprentices entered the program during 1970, and 8,444 apprentices left the program. Of those who left, 3,681 completed their apprenticeship while 4,763 terminated for other reasons.

- Of the 22,586 registered apprentices, 12,151 or 53.2 percent were attending classes of related instruction, 7,565 or 62 percent were attending classes provided by public schools, and 4,586 or 38 percent were attending classes provided by program sponsors.

- Of the 7,565 attending classes provided by public schools, 1,908 attended classes given by the Boards of Cooperative Educational Service, 617 attended classes in comprehensive high schools, and 5,040 attended classes given by vocational technical high schools.

- With regard to courses provided by program sponsors, Joint Apprenticeship Councils provided instruction to 3,617 apprentices, and 97 employers provided instruction to 969 apprentices.

- Of those apprentices who received related instruction in courses provided by program sponsors, 59 percent attended training facilities set up and administered by local joint apprenticeship committees, 23 percent attended colleges or institutes, and 12 percent received instruction on employers' premises. The remainder attended public or private schools or took correspondence courses.

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I. THE NATURE OF APPRENTICESHIP

Simply stated, apprenticeship is a system of training for those highly skilled occupations usually called crafts or trades. It is the learning of manual skills through working on the job, and the study of classroom subjects related to the work.

The idea of apprenticeship is not new. In fact, it is one of the oldest forms of training in which skills and knowledge associated with the skilled crafts and trades are passed from a skilled worker to a trainee. Evidence supporting the concept of apprentice training has been found in the ancient Egyptian tombs, and the Babylonian Code of Hammurabi provided a written account of a system of apprenticeship in 2100 B.C. During the 13th and 14th centuries, expert craftsmen such as silversmiths, weavers, coach makers, and blacksmiths formed trade groups called guilds for the purpose of keeping the highest possible standards of quality and workmanship in their individual trades.

One of the main duties of the guild master was to train apprentices to carry on the skills of the trades. A boy, usually when he reached the age of 16, was assigned to a master craftsman whose trade he wished to follow. This apprentice not only worked for and learned from the master, but actually lived in his home as a part of his family for a period of years.

In the shop, the apprentice was taught the skills of the trade, spending hours working under the careful supervision of the master. His work was checked every step of the way for skill and accuracy. In addition to learning the "secrets of the trade," the apprentice also learned to be industrious, reliable,and proud of his work, for the skilled and honest craftsman was assured a position of honor and prosperity in the community.

After completing his apprenticeship, the young man journeyed from one place to another, working and gaining experience on different jobs. Because of the traveling nature of his work, he was called a journeyman -- a term that is still used today for a craftsman who has acquired the skills of his trade.

The system of apprenticeship has proven to be an effective method for the acquisition of skills. It has survived through the ages and is still widely used today. Even government, at both the state and Federal level, has recognized the importance of apprenticeship in developing an adequate supply of skilled craftsmen for industrial growth and national defense. Laws have been passed to encourage the expansion of apprenticeship programs and to regulate their operations.

Because the demands of modern industry require a greater knowledge and skill on the part of craftsmen, the sponsors of apprenticeship programs today provide better planned and skilled training

than did the guildsmen of yesterday.

Apprentice training programs may be conducted (sponsored) by an employer, a group of employers, or a joint apprentice committee (JAC) representing both the employer(s) and the union. In order for the training program to be recognized by the government as a bona fide apprenticeship program, the sponsor must describe in writing just how he intends to conduct his program including how apprentices will be selected, what training the apprentice will receive, the length of the training period, and the wages to be paid to the apprentice. With the assistance of the State or Federal apprentice training representative, this information is developed and forwarded to the State Department of Labor's Apprentice Training Section for review. If the training program meets the minimum standards as prescribed in State law and regulations, the program is approved and "registered" with the State of New York. Sponsors of registered apprenticeship programs are eligible to receive certain benefits under Federal and State legislation.

After the program is registered, the sponsor may begin to recruit and select apprentices. An agreement (sometimes called an indenture) is signed between the sponsor and each new apprentice which sets forth the wages to be paid and other conditions of training. When signing it, the sponsor agrees to train and teach the apprentice, and the apprentice agrees to work and learn. The name of each apprentice indentured is also registered with the State Apprentice Training Section.

The road to becoming a qualified journeyman is not an easy or a short one. The term of apprenticeship is not less than 2 years and may be as long as 7 years, depending upon the skill requirements of the specific trade. The majority of trades have a normal term of 4 years. The term of apprenticeship may be reduced somewhat if the employer agrees to grant credit for previous training or work experience or if the apprentice proves unusually quick in learning the skills of the trade.

While in the program, the apprentice must spend at least 144 hours per year in classes of related instruction when such classes are available. These classes, provided by the local public school system or by the sponsor, give the apprentice the theory and knowledge necessary for the craft.

Apprenticeship is an economic system as well as a training system. The costs of training, which the employer must bear, are substantial. The employer must not only pay wages to the new apprentice before he becomes productive, but must also pay journeyman wages to the craftsmen during the nonproductive time spent teaching the apprentice. To help compensate the employer for some of these costs, a system of progressive wage rates is provided in apprenticeship programs. The starting wage for an apprentice is generally about one-half the wage rate for the qualified journeyman. As the apprentice gains skill, he is given periodic wage increases, usually every 6 months. The schedule of wage rates and time periods are structured so that at the end of the term of training the apprentice will be receiving the journeyman's rate of pay.

The skilled occupations, recognized as apprenticeable trades, are those which must be learned largely through a learning-by-doing method rather than through the formal classroom method of teaching. The approved standards for each training program include a list of all of the work processes that each apprentice must experience and master by moving from one job to another during the training period. Appendixes B and C contain the list of apprenticeable trades and a "work processes" sample.

For example, a machinist apprentice no doubt spends his first few weeks on the job as a toolroom attendant where he learns the names and uses of the tools and gives them out as they are called for. After completing his toolroom experience, he is assigned to a machine. It is the function of the supervisor of apprentices, or whoever is assigned the responsibility for training, to move the apprentice from one operation to the next to insure a well-rounded work experience. At the end of the 4-year term, the machinist apprentice has learned to perform operations with a high degree of accuracy with all types of materials on all types of lathes, milling machines, grinders, planers, and shapers. In addition, the apprentice has learned heat treatment techniques, bench work, and general machinery repair. In the related instruction class, the apprentice learned the mathematics which machinists must know, the quick checks, and the practical methods necessary for speed and accuracy. Blueprint reading, mechanical drawing, physics, and other sciences relating to his work are learned; the apprentice also gains insights into the economic world, including industrial history, management, and industrial labor relations.

Completion of all the requirements of the registered apprenticeship program entitles the graduate to receive a New York State certificate of completion. This certificate attests to the attainment of certain minimum standards and is his passport to jobs all over the country. The craftsman who successfully completes his apprenticeship therefore acquires a certain status in his trade and possesses a certain identification with others who have had similar experiences.

II. THE ADMINISTRATION OF APPRENTICESHIP

A. LEGISLATIVE BACKGROUND

Government has long recognized the socioeconomic impact that apprentice training has had upon the development of this nation. As a result, both the Federal and State governments have enacted legislation to insure the development and continuation of apprentice training programs of high standard.

Laws regulating apprentice agreements have been on New York State's statute books since 1830, although decrees concerning the instruction of apprentices can be traced to colonial times. In 1871, as a result of craft union agitation, a law was enacted in New York State requiring all indentures to be in writing specifying employer and apprentice responsibilities. This law also provided for penalties such as imprisonment or a fine for violation of the agreement. In a comprehensive report handed down by the attorney general in 1889, the 1871 law was declared for all intent and purposes unenforceable. In 1896, the apprentice law was recodified and became Article VII of the Domestic Relations Law. The required contents of the indenture agreement were redefined. The statute specified who could legally sign the agreement and provided penalties for violation of the agreement.

A special inquiry was conducted in 1907-08 examining the operation of training programs. As a result, the New York State Department of Education initiated special courses in evening schools for registered apprentices. In 1935, an advisory Council on Apprenticeship Training was named by the Board of Regents to cooperate with industry, unions, and public agencies to promote the development of apprentice programs.

In 1941, legislation directed the Governor, upon joint recommendation of the Commissioner of Education and the Industrial Commissioner, to appoint an Apprenticeship Council composed of three representatives each from employer and employee organizations and one representative of the general public to act as chairman. The Council was authorized to establish standards for apprenticehip agreements, adopt rules and regulations, compile data necessary to determine trends of employment opportunity in various trades, and terminate any apprenticeship agreements. The legislation also provided that a supervisor of apprentice training in the Labor Department be in charge of the promotion of apprentice training and a supervisor of apprentice training in the Education Department be in charge of the development and supervision of related technical courses provided by public schools.

In 1945, the Apprenticeship Council Law was included as Article 23 of the State Labor Law. Amendments to article 23 in 1961 altered the role of the Apprenticeship Council to that of an advisory body to the Industrial Commissioner, delegated broader executive powers to the Commissioner, and increased the council membership from

7 to 11 by the addition of two representatives from both employer and employee organizations in order to promote broader industrial and geographic representation. In 1968, the council's name was changed to the State Apprenticeship and Training Council to more adequately reflect the nature of its activities. Article 23 is contained in Appendix A.

The National Apprenticeship Act of 1937 (The Fitzgerald Act) is the basic Federal law establishing apprenticeship policy. Under this law, the Secretary of Labor is authorized to promote the advancement of labor standards as safeguards for the apprentice, establish basic training standards, and encourage the states to cooperate toward these ends. It is also significant to note that with the passage of this act the U.S. Congress went on record as recognizing that training skilled workers was a matter for public concern.

The development of apprentice training programs was significantly affected by two divergent types of legislation enacted on both the State and Federal level subsequent to the passage of The Fitzgerald Act.

The first type of legislation provided for financial assistance to individuals receiving training. Public Law 346 (U.S.) was the first "GI bill." Under this law, the returning veterans of World War II were provided with financial assistance if they were enrolled in a recognized apprentice training program. In effect, the GI bill subsidized apprentice training just as it did for formalized education. This financial assistance was also made available under Public Law 550 for veterans of the Korean conflict and under Public Law 90-77 for the veterans returning during the Vietnam era.

The second type of legislation sought to provide equal opportunity to all individuals seeking apprentice training. Title 29, Part 30, added to the Code of Federal Regulations in 1964, established policies and procedures providing for equality of opporunity in all registered apprenticeship programs.

In New York State, Section 296 of the Executive Law, adopted in 1964, provides that there shall be equal opportunity in all phases of apprenticeship, with no discrimination based on race, creed, color, or national origin, and that all selections for registered apprenticeship programs are to be made in accordance with objective standards which permit review.

Effective September 1, 1964, a mandatory code of formal regulations was promulgated by the Industrial Commissioner to implement this law. These regulations indicate for program sponsors the means to comply with the law, thus assuring nondiscrimination in registered apprenticeship programs. The code provides submission of written selection standards and procedures to the Bureau of Apprentice Training for approval prior to registering apprentice training programs, public notice of apprenticeship opportunities, appointment of apprentices in order of rank after they have displayed qualifications, maintenance of complete records of the selection process, appeal to the State Division of Human Rights

in cases of alleged discrimination, and termination of registration of programs found in noncompliance.

In April 1971, amendments to the Federal regulations on equal employment opportunity in apprenticeship (title 29 CFR part 30) became effective. This necessitated the revision of the State regulation which was promulgated by the Industrial Commissioner, effective January 1, 1972. The new regulation mandates that all sponsors of registered apprenticeship training programs prepare and carry out affirmative action plans to increase minority participation in apprenticeship as well as prohibit discriminatory practices. The goal of affirmative action is to achieve utilization of minority manpower in apprenticeship in proportion to their ratio in the local labor force.

B. FUNCTIONS OF GOVERNMENT

Several agencies on the Federal and State level are directly concerned with the promotion, development,and conduct of apprentice training programs. On the State level,they are the Department of Labor, Division of Employment, through its Apprentice Training Section and the Apprenticeship Information Centers; the New York State Apprenticeship and Training Council; and the State Education Department, Division of Occupational Education Instruction through its Bureau of Trade and Technical Education. On the Federal level, they are the Bureau of Apprenticeship and Training of the United States Department of Labor's Manpower Administration and the Veteran's Administration. The activities and responsibilities of all these agencies as they relate to apprenticeship will be described in this section.

-STATE LEVEL-

1. The New York State Department of Labor.

The Department of Labor is designated as the State apprentice training agency in New York. Article 23 of the State Labor Law and Section 296 of the Executive Law are the statuatory mandates which outline the responsibilities and powers of the Department of Labor with regard to apprenticeship training. Under these laws, the Industrial Commissioner is responsible for the promotion, development,and maintenance of apprenticeship agreements, in addition to administering the equal employment opportunity regulations governing apprentice training programs. The powers and duties of the Industrial Commissioner are set forth in article 23, section 811.

On the operating level, the Industrial Commissioner's responsibilities are delegated to the Apprentice Training Section which is part of the Division of Employment's Office of Manpower Development. The Apprentice Training Section is headquartered in Albany and has district offices serving the New York City, Nassau-Suffolk, Westchester, Albany, Binghamton, Utica, Syracuse, Rochester, and Buffalo areas. The field staff assigned to the district offices works directly with program sponsors and would-be sponsors to promote, develop, register, and service the individual programs.

a. Promotion

Apprentice training representatives visit employers and unions to explain the advantages of apprentice training programs and encourage the establishment of registered programs. They also engage in public speaking engagements to promote interest in apprentice training and to create awareness of opportunity.

b. Development and Registration.

When a prospective sponsor shows interest, an apprentice training representative will assist the sponsor in developing an apprentice training program after determining whether the proposed program is for an occupation designated as apprenticeable; the sponsor is able and willing to conduct training in accordance with approved standards for the particular trade; and the sponsor will conform to regulations regarding nondiscrimination in recruitment and selection of apprentices. All programs developed in accordance with these standards are submitted to the central office of the Apprentice Training Section for review and registration.

After the program is reviewed and registered, the field representative assists the sponsor and the prospective apprentice with completion of the indenture agreement. The field representative notifies the appropriate local school official, designated by the State Department of Education, of the indenture. The designated school official determines where related instruction is available, the nature of the related instruction, and the particulars concerning the school involved. The school official notifies the apprentice of where and when related instruction will be given if it is available.

c. Maintenance and Service.

The apprentice training representative is required to make two maintenance visits per year to the sponsors of each program. During these visits, he determines if apprentices are receiving training as specified in the approved program standards, adequate records are being maintained, related instruction is available and apprentices are attending, wages are being paid in accordance with the program standards, revisions need to be made in the program standards, program standards are in compliance with the Regulations on Equal Employment Opportunity in Apprenticeship Training, new apprentices are properly registered,and apprentice completers are properly credited.

Service visits are generally made at the request of a program sponsor between scheduled maintenance calls. A sponsor may require assistance in arranging for new apprentice recruitment (affirmative action, testing, change

in recruitment process, etc.) or in amending his program standards (work process, related instruction, minimum requirements, etc.); visits may be made to collect specific program data which may be required for special studies.

Compliance visits are made for the specific purpose of explaining apprenticeship equal opportunity requirements and assisting program sponsors in developing standards and procedures for the recruitment and selection of apprentices in accordance with State regulations.

d. Certificate of Completion.

When the apprentice has completed his training in a registered program, at the request of the employer, the State Department of Labor recognizes his achievement of journeymens status by awarding him a certificate of completion.

2. Approval of Programs for Veterans.

Under Public Law 90-77, qualified veterans are eligible for financial assistance if enrolled in an approved program of apprenticeship on a full-time basis. To protect the veteran, apprentice training programs must be approved by a designated approval body before training assistance allowances can be authorized. The United States Veterans Administration has designated the Department of Labor, Division of Employment as the authorized approval body in New York State.

The approval of a veteran's apprentice training program is handled in the same manner as a regular apprentice program. The apprentice training representative is responsible for promotion, development, and maintenance of an approve program. Final approval resides with the central office in Albany. The central office notifies the appropriate Veterans Administration Regional Office,located in New York City or Buffalo,of the approval. The individual veteran is responsible for securing his certificate of eligibility from the Veterans Administration, the agency which issues the benefit checks. This certificate establishes the length of time the veteran is eligible for benefits.

A veteran's training supervisor located in the Division of Employment's Office of Manpower Development, is responsible for providing technical assistance to the Apprentice Training Section and serves as a liaison between the State Department of Labor and the United States Veterans Administration on matters related to veterans' training programs.

3. Apprenticeship Training Information Centers.

During 1967, two Apprenticeship Training Information Centers (located in New York City and Buffalo) were established by the Division of Employment. These centers assemble and distribute apprentice information to all interested parties, promote apprentice openings, and provide related services to program sponsors.

4. The New York State Apprenticeship and Training Council.

The council, appointed by the Governor, serves as an advisory body to the State Industrial Commissioner on matters relating to the State's apprenticeship program.

The council is presently composed of a total of 15 members; seven representatives of organized labor, seven representatives of management, and a chairman representing the public. The Commissioners of Education and Commerce and the Industrial Commissioner are ex officio members without a vote.

In addition to giving advice on the full spectrum of apprenticeship programs and training in the State, the council also has statutory responsibility for recommending standards for apprenticeship agreements, maintaining close relationships with public and private agencies concerned with the development of skilled manpower, and recommending research projects on facts and trends in apprenticeship training.

5. New York State Education Department, Bureau of Trade and Technical Education.

The State Education Department's Division of Occupational Education Instruction, through its Bureau of Trade and Technical Education, coordinates activities with the Apprentice Training Section and local boards of education in arranging for related and supplemental instruction classes. While both the Apprentice Training Section and The Bureau of Trade and Technical Education take part in determining the need for such classes, the Bureau of Trade and Technical Education is responsible for providing the related instruction for all apprentices.

All aspects of related instruction must be approved by the Bureau of Trade and Technical Education in accordance with the Education Law. The bureau also determines the availability, suitability, and effectiveness of a program's related instruction. Some of the bureau's other responsibilities in this field include determining conditions under which classes of related instruction may be made available, developing courses of study and instructional materials, supervising instruction, granting advance credit for related instruction for individual apprentices, certifying successful completion of related instruction requirements for individual apprentices.

The classes of related and supplemental instruction are conducted on the local level by public schools, employer and/or employee groups, company management, or other education institutions such as vocational or technical schools or community colleges.

A further responsibility of the State Education Department is the administration of State aid for related instruction. Local education authorities may be reimbursed through State aid for part of the costs incurred in providing classes of related instruction to apprentices. This State aid comes from State-approved funds supplemented by Federal funds made available through the Smith-Hughes Act of 1917, the George-Barden Act of 1946, the Vocational Education Act of 1963, and the Vocational Education Act Amendments of 1968.

Prior to 1958, local school boards received $2.50 for each 40-minute class session. In 1962, the legislature, acting upon the recommendation of the Diefendorf Committee, adopted a new State aid formula - the "shared costs" plan - which severely restricted amounts paid to school districts for conducting programs of related instruction.

Local boards of education receive financial assistance to the extent that funds are available in a given year. Amounts per hour of instruction vary from year to year, depending upon the number of classes proposed in the State and the money available. Current practices do not treat the establishment of classes of related instruction for apprentices separately from other adult education classes. Local school authorities determine whether available resources will be applied to related instruction for apprentices or to other adult education classes.

-FEDERAL LEVEL-

1. Bureau of Apprenticeship and Training.

The National Apprenticeship (Fitzgerald) Act of 1937 established the basic Federal apprenticeship policy. The Bureau of Apprenticeship and Training (BAT) of the United States Department of Labor's Manpower Administration is responsible for implementation of this act. The bureau endeavors to stimulate and assist industry and organized labor to develop, expand, and improve apprentice training programs. The bureau maintains a field staff with offices in every State to work with State apprenticeship agencies, trade and industrial education institutions, management, and labor to promote and maintain sound apprentice training programs.

The structure of the Federal Bureau of Apprenticeship and Training closely parallels that of the Apprenticeship Training Section in New York State. The Federal BAT regional headquarters

is located in New York City under the administration of a regional director. The regional office has area responsibility for New York, New Jersey, Puerto Rico, and the Virgin Islands. New York State is served by a state supervisor, with offices in Albany, and a field staff. The Federal apprenticeship and training representatives provide the same services as the State staff. All programs developed by the Federal staff are submitted to the State Apprentice Training Section for review and registration.

2. The Veterans Administration.

The Veterans Administration, on the Federal level, acts as a service organization to the veteran, overseeing the expenditure of funds and services available to him.

Although the Administration has granted the State Department of Labor authority to approve programs, as previously described, the Veterans Administration retains the responsibility for determining the eligibility of veterans and payment of benefits. The individual veteran is responsible for securing his CERTIFICATE OF ELIGIBILITY from the Veterans Administration. This certificate establishes the length of time the veteran is eligible for benefits.

III. THE EXTENT OF APPRENTICESHIP

A. APPRENTICE AND PROGRAM DATA

A.1 APPRENTICES IN TRAINING, UNITED STATES AND NEW YORK STATE AS OF DECEMBER 31 OF EACH YEAR

Year	United States[a]	New York State[b]	New York City Metropolitan Area	New York City Metropolitan Area as a Percent of New York State
1960	161,128	16,316	11,448	70.2
1961	155,649	18,378	13,078	71.2
1962	158,887	20,983	15,438	73.6
1963	165,318	21,708	16,373	75.4
1964	170,533	21,395	15,708	73.4
1965	183,955	20,415	14,462	70.8
1966	207,511	20,210	13,460	66.6
1967	220,151	18,986	11,609	61.1
1968	237,996	19,896	11,482	57.7
1969	273,952	22,030	12,294	55.8
1970	279,693	22,856	13,064	57.2

[a]U.S. Department of Labor, Bureau of Labor Statistics, Handbook of Labor Statistics, 1968, p. 93, for the years 1960-1968. U.S. Department of Labor, Office of Manpower Management Data Systems, August 1970, for the years 1969 and 1970.

[b]New York State Department of Labor, Division of Research and Statistics.

A. APPRENTICES IN TRAINING BY INDUSTRY GROUP
NEW YORK STATE
AS OF DECEMBER 31 OF EACH YEAR

Year	Total All Trades	Construction	Printing	Machine Tool & Metal Mfg.	Other Mfg.	Service and Repair
1960	16,332	10,174	3,117	1,200	281	1,560
1961	18,381	11,429	3,314	1,267	310	2,061
1962	20,982	13,463	3,484	1,463	310	2,262
1963	21,706	13,695	3,425	1,652	236	2,698
1964	21,393	13,391	3,200	1,817	309	2,676
1965	20,414	12,292	3,085	2,155	291	2,591
1966	20,215	11,216	2,947	2,909	553	2,590
1967	18,896	9,022	3,029	3,453	682	2,800
1968	19,896	9,168	3,254	3,607	530	3,337
1969	22,030	10,541	3,279	3,523	758	3,929
1970	22,856	11,712	3,198	2,919	686	4,341

A. 3 APPRENTICES IN TRAINING BY INDUSTRY GROUP
NEW YORK STATE
AS OF DECEMBER 31 OF EACH YEAR
PERCENT DISTRIBUTION

Year	Total All Trades		Construction	Printing	Machine Tool & Metal Mfg.	Other Mfg.	Service and Repair
	Number	Percent					
1960	16,332	100.0	62.3	19.1	7.3	1.7	9.6
1961	18,381	100.0	62.2	18.0	6.9	1.7	11.2
1962	20,982	100.1*	64.2	16.6	7.0	1.5	10.8
1963	21,706	100.0	63.1	15.8	7.6	1.1	12.4
1964	21,398	100.0	62.6	15.0	8.5	1.4	12.5
1965	20,414	100.0	60.2	15.1	10.6	1.4	12.7
1966	20,215	100.0	55.5	14.6	14.4	2.7	12.8
1967	18,896	100.0	47.5	16.0	18.2	3.6	14.7
1968	19,896	100.0	46.1	16.4	18.1	2.7	16.7
1969	22,030	100.0	47.8	14.9	16.1	3.4	17.8
1970	22,856	100.0	51.2	14.0	12.8	3.0	19.0

*Due to rounding figures, this percent figure totals 100.1, rather than 100.

A.4 APPRENTICES ENTERING TRAINING BY INDUSTRY GROUP
NEW YORK STATE
AS OF DECEMBER 13 OF EACH YEAR

Year	Total All Trades	Construction	Printing	Machine Tool & Metal Mfg.	Other Mfg.	Service and Repair
1960	7,333	4,030	1,792	531	157	823
1961	7,346	4,617	966	547	120	1,096
1962	9,195	5,958	1,206	678	91	1,262
1963	7,336	3,971	1,225	745	91	1,304
1964	6,841	4,025	897	778	154	987
1965	5,423	2,722	722	1,007	160	812
1966	6,041	2,408	753	1,535	347	998
1967	6,854	2,779	719	1,738	443	1,175
1968	9,284	4,335	1,296	1,521	183	1,949
1969	11,040	4,914	1,483	1,627	549	2,467
1970	9,234	4,433	1,072	1,061	300	2,368

A.5 APPRENTICES COMPLETING TRAINING BY INDUSTRY GROUP
NEW YORK STATE
AS OF DECEMBER 31 OF EACH YEAR

Year	All Trades	Construction	Printing	Machine Tool & Metal Mfg.	Other Mfg.	Service and Repair
1960	3,160	1,768	777	329	43	243
1961	2,936	1,779	611	258	37	251
1962	3,427	1,909	817	218	41	442
1963	3,390	1,873	942	229	64	282
1964	3,767	2,065	908	247	47	500
1965	3,427	2,098	563	299	62	405
1966	3,417	2,032	635	285	28	437
1967	4,047	2,940	276	366	72	393
1968	4,559	2,550	748	444	162	655
1969	4,217	1,908	934	610	177	588
1970	3,681	1,542	751	738	80	570

A.6 APPRENTICES AND PROGRAMS BY DEPARTMENT OF LABOR ADMINISTRATIVE DISTRICTS
NEW YORK STATE, 1970

District	Apprentices		Programs	
	Number	Percent	Number	Percent
STATE TOTAL	22,856	100.0	4,735	100.0
Metropolitan	13,064	57.2	1,508	31.8
Albany	1,678	7.3	572	12.1
Binghamton	1,165	5.1	552	11.7
Buffalo	2,799	12.2	820	17.3
Rochester	1,998	8.7	622	13.1
Syracuse	1,293	5.7	272	5.8
Utica	859	3.8	389	8.2

Note: See Table B.3 for counties included in each district.

A.7 APPRENTICES AND PROGRAMS BY TYPE OF PROGRAM SPONSOR
NEW YORK STATE, 1970

Type of Sponsor	Apprentices		Programs	
	Number	Percent	Number	Percent
TOTAL	22,856	100.0	4,735	100.0
Group Joint JAC				
Type 1	208	0.9	27	.6
Type 2	13,230	57.9	328	6.9
Indiv. Firm JAC	2,704	11.8	850	18.0
Non JAC	6,714	29.4	3,530	74.5
Group Non-Joint	--	--	--	--

Note: A group joint JAC (Joint Apprenticeship Committee) program is sponsored by a group of establishments jointly with a union. The JAC is composed of members of labor and management who have responsibility for administering all matters pertaining to the training program. There are two kinds of group joint JAC'S:

Type 1 - the apprentice is "indentured" to a employer within the group and is supervised by and expected to work in the particular establishment until he completes his training.

Type 2 - the apprentice is "indentured" to the Joint Apprenticeship Committee and is likely to move around to several establishments during the term of his training.

An individual joint program is sponsored by a single establishment with the participation of a union.

An individual nonjoint program is sponsored by a single establishment without the participation of a union.

A group nonjoint is a program sponsored by a group of establishments without the participation of a union. Apprentices are "indentured" to the individual establishment in the group.

A.8 APPRENTICES AND PROGRAMS BY TRADE GROUP
NEW YORK STATE, 1970

Trade Group	Apprentices		Programs	
	Number	Percent	Number	Percent
TOTAL	22,856	100.0	4,735	100.0
CONSTRUCTION INDUSTRY	11,712	51.2	1,117	23.6
Brick, Marble, and Cement	693	3.0	96	2.0
Woodworking	1,838	8.0	228	4.8
Plumbing and Heating	2,672	11.7	285	6.0
Interior Finishing	457	2.0	69	1.4
Sheetmetal, Iron, and Roofing	2,040	8.9	136	2.9
Tile, Glass, and Floor Covering	249	1.1	70	1.5
Electrical	3,473	15.2	188	4.0
Other Construction	290	1.2	45	1.0
PRINTING INDUSTRY AND ALLIED TRADES	3,198	14.0	526	11.1
Engraving and Composition except Lithographic	743	3.3	162	3.4
Press	1,153	5.1	144	3.0
Lithographic	855	3.7	171	3.6
Bindery	368	1.6	28	.6
Other Printing	79	.3	21	.5
MACHINE TOOL, METAL MANUFACTURING INDUSTRIES, AND ALLIED TRADES	2,919	12.8	1,051	22.2
Tool and Die	1,107	4.9	413	8.7
Other Machine Shop	1,493	6.5	483	10.2
Primary Metal	199	.9	81	1.7
Other Metal, etc.	120	.5	74	1.6
OTHER MANUFACTURING INDUSTRIES TRADES	686	3.0	249	5.3
Jewelry Manufacturing	297	1.3	41	.9
Textile and Apparel	108	.5	90	1.9
Electrical Manufacturing	61	.3	31	.7
Woodworking	85	.4	51	1.1
Stone, Clay, and Glass Manufacturing	123	.5	29	.6
Other Manufacturing	12	.0	7	.1
SERVICE AND REPAIR INDUSTRIES TRADES	4,341	19.0	1,792	37.8
Automotive	1,469	6.4	875	18.5
Railroad	207	.9	23	.5
Aircraft	17	.1	9	.2
Electrical Repair	536	2.3	147	3.1
Food Preparation	746	3.3	280	5.9
Other Service and Repair	1,366	6.0	458	9.6

A.9 APPRENTICES AND PROGRAMS BY RANK ORDER OF TRADES HAVING MORE THAN 100 APPRENTICES NEW YORK STATE, 1970

Trade	Number of Apprentices	Number of Programs
Electrician	3,306	159
Carpenter	1,817	218
Automotive Repair	1,469	875
Sheetmetal Worker	1,369	83
Plumber	1,299	74
Machinist	978	342
Auto Mechanic	944	517
Engraver-Comp. Exc. Lith.	743	162
Tool and Die Maker	710	304
Newspaper Web Press	645	15
Compositor	635	104
Meat Cutter	596	203
Steamfitter	593	13
Bricklayer-Mason	473	62
Plumber-Steamfitter	432	108
Iron Worker	430	14
Business Machine Mechanic	429	66
Dental Technician	390	148
Bookbinder	334	16
Litho Pressman	291	69
Auto Body Repair and Painter	280	201
Toolmaker	262	80
Litho Press Operator	261	16
Maintenance Machinist	239	63
Operating Engineer (obsol)	219	2
Stationary Engineer	208	39
Maintenance Electrician	198	70
Millwright	177	39
Painter-Decorator-Paperhanger	176	20
Refrigerator-Air Conditioning Mechanic	172	67
Glazier	171	34
Roofer	160	24
Painter-Decorator	136	20
Litho Stripper	131	36
Electric Motor Repairman	121	20
Jewelry Polisher	113	3
Lather-Wood-Wire-Metal	110	10
Electrical Lineman	107	23
Pressman	106	42
Cook-Chef	103	54

A.10 APPRENTICE TRAINING PROGRAMS WHICH STARTED AND TERMINATED DURING 1970 BY INDUSTRY GROUP

Industry Group	Number Started	Number Terminated	Reason for Termination		
			Out of Business	No Apprentices	Other Reasons
TOTAL	1,536	1,313	22	1,268	23
Construction	362	268	4	260	4
Printing	135	101	2	93	6
Machine Tool, Metal Manufacturing	222	310	7	298	5
Other Manufacturing	110	64	-	64	-
Service and Repair	707	570	9	553	8

Note: When a program has no apprentices in training for over a 6-month period, it is terminated. Termination of a program for lack of apprentices is usually an indication that the program was successful in supplying the employer with a sufficient number of trained craftsmen to meet his needs.

A.11 APPRENTICES ENTERING AND LEAVING APPRENTICESHIP DURING 1970 BY INDUSTRY GROUP

Industry Group	Total Apprentices Entering	Total Apprentices Leaving	Reasons for Leaving				
			Completing	Non-Completions			
				Military Service	Program Cancelled	Voluntary Quit	Layoff & Other
TOTAL	9,234	8,444	3,681	285	34	2,885	1,559
Construction	4,433	3,262	1,542	153	27	864	676
Printing	1,072	1,214	751	15	1	245	202
Machine Tool, Metal Manufacturing	1,061	1,668	738	50	4	568	308
Other Manufacturing	300	372	80	5	-	236	51
Service and Repair	2,368	1,928	570	62	2	972	322

A.12 APPRENTICES IN TRAINING, BY TRADE GROUP
AND ADMINISTRATIVE DISTRICT

TR DE GROUP	Total	Metropolitan	Albany	Binghamton	Buffalo	Rochester	Syracuse	Utica
TOTAL	22,856	13,064	1,678	1,165	2,799	1,998	1,293	859
CONSTRUCTION INDUSTRY	11,712	7,431	946	490	1,086	733	701	325
Brick, Marble, and Cement	693	373	67	40	46	51	52	64
Woodworking	1,838	989	267	114	114	163	121	70
Plumbing and Heating	2,672	1,607	228	105	343	188	139	62
Interior Finishing	457	310	31	25	32	7	31	21
Sheetmetal, Iron and Roofing	2,040	1,236	124	84	301	107	151	37
Tile, Glass, and Floor Covering	249	147	35	8	30	7	15	7
Electrical	3,473	2,504	190	103	216	204	192	64
Other Construction	290	265	4	11	4	6	-	-
PRINTING INDUSTRY AND ALLIED TRADES	3,198	2,174	159	125	367	169	98	106
Engraving and Composition except Lithographic	743	432	63	23	98	47	50	30
Press	1,153	816	30	73	160	29	23	22
Lithographic	855	620	34	10	51	81	24	35
Bindery	368	263	10	19	51	7	1	17
Other Printing	79	43	22	-	7	5	-	2
MACHINE TOOL, METAL MANUFACTURING INDUSTRIES AND ALLIED TRADES	2,919	741	239	212	706	570	266	185
Tool and Die	1,107	300	30	87	242	296	107	45
Other Machine Shop	1,493	371	189	80	379	209	134	131
Primary Metal	199	35	18	33	55	43	10	5
Other Metal, etc.	120	35	2	12	30	22	15	4
OTHER MANUFACTURING INDUSTRIES TRADES	686	543	18	24	37	23	21	20
Jewelry Manufacturing	297	291	-	-	4	-	-	2
Textile and Apparel	108	100	1	2	-	1	2	2
Electrical Manufacturing	61	26	-	7	9	8	-	11

TRADE GROUP	Total	Metropolitan	Albany	Binghamton	Buffalo	Rochester	Syracuse	Utica
Woodworking	85	18	13	7	21	4	17	5
Stone, Clay, and Glass Manufacturing	123	101	4	6	1	9	2	-
Other Manufacturing	12	7	-	2	2	1	-	-
SERVICE AND REPAIR INDUSTRIES TRADES	4,341	2,175	316	314	603	503	207	223
Automotive	1,469	334	157	157	320	358	57	86
Railroad	207	159	-	-	1	16	31	-
Aircraft	17	4	-	7	2	4	-	-
Electrical Repair	536	317	34	35	60	25	20	45
Food Preparation	746	441	69	56	96	26	30	28
Other Service and Repair	1,366	920	56	59	124	74	69	64

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A.13 APPRENTICES COMPLETING TRAINING, BY TRADE GROUP
AND ADMINISTRATIVE DISTRICT

TRADE GROUP	Total	Metropolitan	Albany	Binghamton	Buffalo	Rochester	Syracuse	Utica
TOTAL	3,681	1,952	337	287	475	316	190	124
CONSTRUCTION INDUSTRY	1,542	840	167	120	158	122	93	42
Brick, Marble, and Cement	95	28	19	11	11	9	8	9
Woodworking	197	90	36	24	6	24	11	6
Plumbing	252	109	35	27	46	14	14	7
Interior Finishing	129	94	12	8	6	-	7	2
Sheetmetal, Iron, and Roofing	245	94	16	19	58	31	24	3
Tile, Glass, and Floor Covering	71	34	5	2	4	5	-	1
Electrical	508	332	43	28	27	38	29	11
Other Construction	45	39	1	1	-	1	-	3
PRINTING INDUSTRY AND ALLIED TRADES	751	553	66	19	53	37	11	12
Engraving and Composition except Lithographic	184	123	32	4	14	4	1	6
Press	227	154	15	14	32	4	5	3
Lithographic	218	172	8	-	1	29	5	3
Bindery	109	94	9	1	5	-	-	-
Other Printing	13	10	2	-	1	-	-	-
MACHINE TOOL, METAL MANUFACTURING INDUSTRIES, AND ALLIED TRADES	738	158	55	115	196	127	54	33
Tool and Die	317	63	11	46	85	79	22	11
Other Machine Shop	343	67	41	60	94	30	29	22
Primary Metal	56	27	2	3	9	12	3	-
Other Metal, etc.	22	1	1	6	8	6	-	-
OTHER MANUFACTURING INDUSTRIES TRADES	80	55	2	5	6	6	3	3
Jewelry Manufacturing	35	35	-	-	-	-	-	-
Textile and Apparel	4	-	1	1	1	1	-	-
Electrical Manufacturing	5	-	-	-	2	1	-	2
Woodworking	14	4	1	1	3	1	3	1

TRADE GROUP	Total	Metropolitan	Albany	Binghamton	Buffalo	Rochester	Syracuse	Utica
Stone, Clay, and Glass Manufacturing	22	16	-	3	-	3	-	-
Other Manufacturing	-	-	-	-	-	-	-	-
SERVICE AND REPAIR INDUSTRIES TRADES	570	346	47	28	62	24	29	34
Automotive	115	29	16	5	21	13	22	9
Railroad	-	-	-	-	-	-	-	-
Aircraft	1	-	-	-	1	-	-	-
Electrical Repair	99	52	8	6	13	1	5	14
Food Preparation	164	129	11	2	15	2	1	4
Other Service and Repair	191	136	12	15	12	8	1	7

A.14 PERCENTAGE OF APPRENTICES (NONCOMPLETERS) BY MONTHS OF TRAINING COMPLETED AND INDUSTRY GROUP

Industry Group	Non-Completers		Months of Training Completed				
	Number	Percent	Less than 12	12-23	24-35	36 and over	Not Recorded
TOTAL	4763	100%	37.2%	26.1%	15.7%	17.3%	3.7%
Construction	1720	100%	42.9%	24.9%	14%	14.2%	4.0%
Printing	463	100%	26.1%	21.0%	11.2%	22.3%	19.4%
Machine Tool, Metal Manufacturing	930	100%	26.0%	24.6%	19.8%	28.5%	1.1%
Other Manufacturing	292	100%	53.1%	22.6%	13.0%	11.3%	0
Service and Repair	1358	100%	38.2%	31.1%	17.1%	13.0%	.6%

B. RELATED INSTRUCTION DATA
(NEW YORK STATE, 1970)

B.1 APPRENTICES ENROLLED IN COURSES OF RELATED INSTRUCTION BY ADMINISTRATIVE DISTRICT

District	Total Registered Apprentices		Total Enrolled in Courses	
	No.	Percentage Distribution	No.	Percentage Distribution
State Total	22,856	100.0	12,151	100.0
Metropolitan	13,064	57.2	6,836	56.3
Albany	1,678	7.3	1,273	10.5
Binghamton	1,165	5.1	499	4.1
Buffalo	2,799	12.2	1,472	12.1
Rochester	1,998	8.7	855	7.0
Syracuse	1,293	5.7	859	7.1
Utica	859	3.8	357	2.9

B.2 PERCENT GE OF TOTAL REGISTERED APPRENTICES ENROLLED IN COURSES OF RELATED INSTRUCTION BY ADMINISTRATIVE DISTRICT

District	Registered Apprentices	Enrolled in Courses	Percent of Total Apprentices Enrolled in Each District
State Total	22,856	12,151	53.2
Metropolitan	13,064	6,836	52.3
Albany	1,678	1,273	75.9
Binghamton	1,165	499	42.8
Buffalo	2,799	1,472	52.6
Rochester	1,998	855	42.8
Syracuse	1,293	859	66.4
Utica	859	357	41.6

B.3 APPRENTICES ENROLLED IN RELATED INSTRUCTION PROVIDED BY PUBLIC SCHOOLS AND PROGRAM SPONSORS COMPARED WITH REGISTERED APPRENTICES, BY COUNTY
1970

County	No. Apprentices Registered	Number of Apprentices Enrolled in Related Instruction		
		Total	Public	Sponsor
NEW YORK STATE	22,856	12,151	7,565	4,586
METROPOLITAN DISTRICT	13,064	6,836	4,188	2,648
New York City (5 counties)	9,676	4,612	3,046	1,566
Nassau	1,088	639	214	425
Orange	226	107	107	-
Putnam	7	-	-	-
Rockland	280	460	300	160
Suffolk	771	514	17	497
Westchester	1,016	504	504	-
ALBANY DISTRICT	1,678	1,273	1,049	224
Albany	729	830	689	141
Clinton	62	23	-	23
Columbia	28	-	-	-
Dutchess	174	116	75	41
Essex	9	-	-	-
Greene	18	-	-	-
Rensselaer	108	65	46	19
Saratoga	87	51	51	-
Schenectady	180	-	-	-
Schoharie	12	-	-	-
Ulster	113	37	37	-
Warren	103	151	151	-
Washington	55	-	-	-
BINGHAMTON DISTRICT	1,165	499	202	297
Allegany	16	-	-	-
Broome	489	107	-	107
Chemung	158	19	-	19
Chenango	61	27	17	10
Delaware	83	16	-	16
Otsego	47	-	-	-
Schuyler	11	8	-	8
Steuben	106	94	9	85
Sullivan	31	-	-	-
Tioga	36	1	-	1
Tompkins	127	227	176	51
BUFFALO DISTRICT	2,799	1,472	378	1,094
Cattaraugus	84	14	14	-
Chautauqua	187	70	37	33
Erie	2,188	1,145	90	1,055
Niagara	340	243	237	6

County	No. Apprentices Registered	Number of Apprentices Enrolled in Related Instruction		
		Total	Public	Sponsor
ROCHESTER DISTRICT	1,998	855	587	268
Genesee	86	38	9	29
Livingston	90	40	40	-
Monroe	1,500	548	325	223
Ontario	154	63	56	7
Orleans	45	30	30	-
Wayne	57	129	127	2
Wyoming	45	7	-	7
Yates	21	-	-	-
SYRACUSE DISTRICT	1,293	859	849	10
Cayuga	44	7	7	-
Cortland	68	-	-	-
Jefferson	140	58	58	-
Onondaga	913	779	779	-
Oswego	115	15	5	10
Seneca	13	-	-	-
UTICA DISTRICT	859	357	312	45
Franklin	35	-	-	-
Fulton	45	70	70	-
Hamilton	2	-	-	-
Herkimer	65	14	14	-
Lewis	-	-	-	-
Madison	17	-	-	-
Montgomery	126	34	-	34
Oneida	371	95	84	11
St. Lawrence	198	144	144	-

Note: A school may provide educational services to a number of adjacent counties. Consequently, it is possible that in a given county, the number of apprentices enrolled in related instruction may exceed the total number of registered apprentices.

B.4 APPRENTICES ENROLLED IN RELATED INSTRUCTION
BY INDUSTRY GROUP

Industry Group	Total Registered Apprentices		Total Enrolled in Courses	
	No.	Percentage Distribution	No.	Percentage Distribution
Total	22,856	100.0	12,151	100.0
Construction	11,712	51.2	8,785	72.3
Printing	3,198	14.0	677	5.6
Machine Tool, Metal Manufacturing	2,919	12.8	1,746	14.3
Other Manufacturing	686	3.0	71	.6
Service and Repair	4,341	19.0	872	7.2

B.5 PERCENTAGE OF TOTAL REGISTERED APPRENTICES ENROLLED
IN COURSES OF RELATED INSTRUCTION BY INDUSTRY GROUP

Industry Group	Total Registered Apprentices	Total Enrolled in Courses	Percent of Total Apprentices Enrolled in Courses
State Total	22,856	12,151	53.2
Construction	11,712	8,785	75.0
Printing	3,198	677	21.2
Machine Tool, Metal Manufacturing	2,919	1,746	59.8
Other Manufacturing	686	71	10.3
Service and Repair	4,341	872	20.1

B.6 APPRENTICES ENROLLED IN RELATED INSTRUCTION PROVIDED BY PUBLIC SCHOOLS AND PROGRAM SPONSORS COMPARED WITH REGISTERED APPRENTICES BY TRADE GROUP

Trade Group	No. of Apprentices Registered	Number of Apprentices Enrolled in Related Instruction		
		Total	Public	Sponsor
TOTAL	22,856	12,151	7,565	4,586
CONSTRUCTION INDUSTRY	11,712	8,785	5,168	3,617
Brick, Marble, and Cement	693	170	134	36
Woodworking	1,838	1,729	833	896
Plumbing and Heating	2,672	2,138	546	1,592
Interior Finishing	457	72	40	32
Sheetmetal, Iron, and Roofing	2,040	959	590	369
Tile, Glass,and Floor Covering	249	47	44	3
Electrical	3,473	3,397	2,868	529
Other Construction	290	273	113	160
PRINTING INDUSTRY AND ALLIED TRADES	3,198	677	461	216
Engraving and Composition except Lithographic	743	485	354	131
Press	1,153	124	70	54
Lithographic	855	58	28	30
Bindery	368	10	9	1
Other Printing	79	-	-	-
MACHINE TOOL, METAL MANUFACTURING INDUSTRIES, AND ALLIED TRADES	2,919	1,746	1,157	589
Tool and Die	1,107	592	443	149
Other Machine Shop	1,493	944	565	379
Primary Metal	199	140	93	47
Other Metal, etc.	120	70	56	14
OTHER MANUFACTURING INDUSTRIES TRADES	686	71	41	30
Jewelry Manufacturing	297	-	-	-
Textile Apparel	108	2	2	-
Electrical Manufacturing	61	16	5	11
Woodworking	85	23	17	6
Stone, Clay, and Glass Manufacturing	123	30	17	13
Other Manufacturing	12	-	-	-
SERVICE AND REPAIR INDUSTRIES	4,341	872	738	134
Automotive	1,469	536	532	4
Railroad	207	3	-	3
Aircraft	17	-	-	-
Electrical Repair	536	221	156	65
Food Preparation	746	18	17	1
Other Service and Repair	1,366	94	33	61

B.7 APPRENTICES ENROLLED IN RELATED INSTRUCTION PROVIDED BY PUBLIC SCHOOLS BY TYPE OF SCHOOL, BY TRADE GROUP

TRADE GROUP	BOCES	PUBLIC HIGH SCHOOL	VOCATIONAL TECHNICAL HIGH SCHOOL	TOTAL
TOTAL	1,908	617	5,040	7,565
CONSTRUCTION INDUSTRY	1,198	332	3,638	5,168
Brick, Marble, and Cement	59	28	47	134
Woodworking	578	11	244	833
Plumbing and Heating	216	68	262	546
Interior Finishing	28	-	12	40
Sheetmetal, Iron, and Roofing	98	128	294	520
Tile, Glass, and Floor Covering	3	-	41	44
Electrical	211	97	2,560	2,868
Other Construction	5	-	178	183
PRINTING INDUSTRY AND ALLIED TRADES	31	15	415	461
Engraving and Composition except Lithographic	8	15	331	354
Press	12	-	58	70
Lithographic	11	-	17	28
Bindery	-	-	9	9
Other Printing	-	-	-	-
MACHINE TOOL, METAL MANUFACTURING INDUSTRIES, AND ALLIED TRADES	338	54	765	1,157
Tool and Die	79	22	342	443
Other Machine Shop	237	31	297	565
Primary Metal	12	-	81	93
Other Metal, etc.	10	1	45	56
OTHER MANUFACTURING INDUSTRIES TRADES	25	1	15	41
Jewelry	-	-	-	-
Textile and Apparel	2	-	-	2
Electrical Manufacturing	5	-	-	5
Woodworking	1	1	15	17
Stone, Clay, and Glass Manufacturing	17	-	-	17
Other Manufacturing	-	-	-	-
SERVICE AND REPAIR INDUSTRIES TRADES	316	215	207	738
Automotive	267	181	84	532
Railroad	-	-	-	-
Aircraft	-	-	-	-
Electrical Repair	14	20	122	156
Food Preparation	16	1	-	17
Other Service and Repair	19	13	1	33

NOTE: BOCES (Board of Cooperative Educational Services) was created to allow for the efficient and economical sharing, among component school districts, of vocational programs, technological equipment and appropriately knowledgeable staff, programs for the physically and mentally handicapped, areawide administrative and supervisory services, and other educational services deemed significant.

B.8 APPRENTICES ENROLLED IN RELATED INSTRUCTION PROVIDED BY PROGRAM SPONSORS BY TYPE OF SPONSOR

Type of Program Sponsor	No. of Sponsors	No. of Programs	No. of Apprentices
Total	147	249	4,586
Joint Apprenticeship Councils	50	53	3,617
Employers	97	196	969

B.9 APPRENTICES AND PROGRAMS BY TYPE OF FACILITY USED BY PROGRAM SPONSORS TO PROVIDE RELATED INSTRUCTION

Type of Facility	Total		JAC-Sponsor		Employer-Sponsor	
	Appr.	Programs	Appr.	Programs	Appr.	Programs
Total	4,586	249	3,617	53	969	196
Employers' Premises	567	50	80	2	487	48
Community College	634	69	366	4	268	65
JAC Training School	2,707	33	2,707	33	-	-
Private College or Institute	412	20	357	1	55	19
Private Trade School	37	12	-	-	37	12
Board of Cooperative Educational Services	41	17	18	2	23	15
Correspondence Course	184	46	86	10	98	36
Not Reported	4	2	3	1	1	1

B.10 PAYMENT OF COSTS OF RELATED INSTRUCTION PROVIDED BY PROGRAM SPONSORS: PERCENT PAID BY SPONSOR AND/OR APPRENTICES BY TYPE OF SPONSOR

Share of Costs	Total		Program Sponsors			
			JAC		Employer	
	No. of Apprentices	No. of Programs	No. of Apprentices	No. of Programs	Apprentices	Programs
100% Paid by Apprentice	30	15	8	2	22	13
50% Paid by Apprentice 50% Paid by Sponsor	629	11	604	2	25	9
30% Paid by Apprentice 70% Paid by Sponsor	1	1	-	-	1	1
25% Paid by Apprentice 75% Paid by Sponsor	3	1	-	-	3	1
20% Paid by Apprentice 80% Paid by Sponsor	3	2	-	-	3	2
10% Paid by Apprentice 90% Paid by Sponsor	136	12	-	-	136	12
100% Paid by Sponsor	3,542	198	2,770	44	772	154
Total Reported	4,344	240	3,382	48	962	192
Total Not Reported	235	4	235	4	-	-
Total	4,579	244	3,617	52	962	192

B.11 APPRENTICES RECEIVING WAGES FOR TIME SPENT IN RELATED INSTRUCTION PROVIDED BY PROGRAM SPONSOR

	Apprentices						Programs					
	Total		JAC		Employer		Total		JAC		Employer	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total Enrolled	4,586	100	3,617	100	969	100	249	100	53	100	196	100
Receive Wages	1,202	26.2	485	13.4	717	74	113	45.4	9	17	104	53.1
Do Not Receive Wages	3,384	73.8	3,132	86.6	252	26	136	54.6	44	83	92	46.9

Appendix A

State of New York
Department of Labor
Division of Employment

APPRENTICESHIP TRAINING

(Article 23 of the New York State Labor Law)

Effective March 19, 1968

ART. 23 APPRENTICESHIP TRAINING

(Article 23, Apprenticeship Council, added by L1945, C377, eff. April 1, 1945. Title of article changed by amendments by L1961, C482, eff. October 1, 1961.)

Section

810. Statement of public policy.
811. Powers and duties of industrial commissioner; personnel.
812. Related and supplemental instruction.
813. State apprenticeship and training council.
814. Local, regional and state joint apprenticeship committees.
815. Suggested standards for apprenticeship agreements.
816. Apprenticeship agreements.
817. Limitation.
818. Separability.

Section 810. Statement of public policy. Skilled manpower constitutes a great resource in this state. Apprenticeship programs, through supervised training and education, develop skilled craftsmen and help meet the increasing needs for such workers in the state's labor force. The continuing development of skilled manpower is essential for individual self-realization and for an expanding industrial economy. To these ends, it is the declared public policy of the state of New York to develop sound apprenticeship training standards and to encourage industry and labor to institute training programs.

810 as added by L1961, C482, eff. October 1, 1961

811. Powers and duties of industrial commissioner; personnel. 1. The industrial commissioner shall have the following powers and duties:

(a) to encourage and promote the making of apprenticeship agreements conforming to the standards established by or pursuant to this article;

(b) to establish suggested standards for apprenticeship agreements in conformity with the provisions of this article;

(c) to supervise the execution of apprenticeship agreements and maintenance of standards;

(d) to register approved apprenticeship agreements, and upon performance thereof, to issue certificates of completion of apprenticeship;

(e) to settle differences arising out of apprenticeship agreements, when such differences cannot be adjusted locally or in accordance with established trade procedure;

(f) to terminate or cancel any apprenticeship agreements in accordance with the provision of such agreements;

(g) to encourage and promote the hiring by any trade or group of trades of persons who are on parole, in order to aid in the rehabilitation of such persons;

(h)to study and disseminate information on apprenticeship training, trends of employment opportunities in various trades, the impact of technological change on skill levels and requirements, the supply of and needs for skilled manpower, and related matters;

(i)to cooperate with the federal government, the state education department, the state department of commerce and other agencies, public and private, in the state;

(j)to adopt such rules and regulations as may be necessary for the effective administration of the purposes and provisions of this article;

(k)to perform such other duties as may be necessary to give full effect to the policies of the state and the provisions of this article.

Par. (g) as added by L1965, C884, eff. July 16, 1965
Former Par. (g), (h), (i), and (j) relettered (h), (i), (j), and (k)

2. The industrial commissioner shall appoint a person who shall be in charge of apprentice training in the department of labor, and who shall act as secretary of the state apprenticeship and training council and of state joint apprenticeship committees. The industrial commissioner is further authorized to appoint such clerical, technical, and professional assistants as shall be necessary to effectuate the purposes of this article. The personnel appointed under this article shall receive an annual compensation to be fixed by the industrial commissioner within the amount provided by appropriation.

Subd 2 as last amended by L1968, C51, eff. March 19, 1968

812. Related and supplemental instruction. Related and supplemental instruction for apprentices, co-ordination of instruction with job experience, and the selection of teachers and co-ordinators for such instruction shall be the responsibility of state and local boards responsible for vocational education.

As provided by other statutes, the department of education shall be responsible for and provide related training as required by apprenticeship programs set up under this article.

813. State apprenticeship and training council. The governor shall appoint a state apprenticeship and training council, composed of seven representatives each from employer and employee organizations respectively and one representative of the general public, who shall be the chairman. The council by majority vote may designate one of its members, other than the chairman, as vice-chairman to act in the absence or inability of the chairman. Each member shall be appointed for a term of three years. Each member shall hold office until his successor is appointed and has qualified, and any vacancy shall be filled by appointment for the unexpired portion of the term. The present members of the council shall continue to hold office until the expiration of their present terms or their earlier terminations by resignation or inability to act. The commissioner of education, the industrial commissioner and the commissioner of

813 cont'd

commerce shall ex officio be members of such council without vote. The members of the council shall be entitled to compensation at a rate not to exceed sixty dollars a day for each meeting called by the chairman and shall be reimbursed for transportation and other expenses actually and necessarily incurred in the performance of their duties under this article.

Subd 1 as last amended by L1968, C51, eff. March 19, 1968

2. The council: (a) shall advise the industrial commissioner on apprentice training matters, including the matters of related and supplemental instruction; (b) may recommend suggested standards for apprenticeship agreements; (c) shall maintain a close and effective liaison with governmental and nongovernmental agencies which are concerned with skilled manpower development and problems; and (d) may recommend research projects on facts and trends relating to apprenticeship training and the supply of and needs for skilled manpower.

814. Local, regional and state joint apprenticeship committees. Local and state joint apprenticeship committees may be approved, in any trade or group of trades, in cities, regions of the state or trade areas, by the industrial commissioner, whenever the apprentice training needs of such trade or group of trades or such regions justify such establishment. Such local,regional,or state joint apprenticeship committees shall be composed of an equal number of employer and employee representatives chosen from names submitted by the respective local or state employer and employee organizations in such trade or group of trades; also such additional members representing local boards of education or other educational agencies as may be deemed advisable. In a trade or group of trades in which there is no bona fide employer or employee organization, the joint committee shall be composed of persons known to represent the interests of employers and of employees respectively, or a state joint apprenticeship committee may be approved as, or the state apprenticeship council may act itself as, the joint committee in such trade or group of trades. Subject to the review of the industrial commissioner and in accordance with the standards established by the industrial commissioner, such committees may devise standards for apprenticeship agreements and give such aid as may be necessary in their operation, in their respective trades and localities.

814 as last amended by L1961, C482, eff. October 1, 1961.
Formerly 813

815. Suggested standards for apprenticeship agreements.
(815, formerly 814, as renumbered by L1961, C482, eff. October 1, 1961)

Suggested standards for apprenticeship agreements are as follows:

1. A statement of the trade or craft to be taught and the required hours for completion of apprenticeship which shall be not less than four thousand hours of reasonably continuous employment.

815 cont'd

2. A statement of the processes in the trade or craft divisions in which the apprentice is to be taught and the approximate amount of time to be spent at each process.

3. A statement of the number of hours to be spent by the apprentice in work and the number of hours to be spent in related and supplemental instruction which instruction shall be not less than one hundred forty-four hours per year when available, such availability to be determined by the commissioner of education.
Subd 3 as last amended by L1958, C266, eff. March 20, 1958

4. A statement that apprentices shall be not less than sixteen years of age.

5. Provision that apprentices shall be selected on the basis of qualifications alone, as determined by objective criteria which permit review, and without any direct or indirect limitation, specification or discrimination as to race, creed, color or national origin.
Subd 5 as last amended by L1964, C948, eff. Sept. 1, 1964

6. A statement of the progressively increasing scale of wages to be paid the apprentice.
Subd 6 as renumbered by L1957, C697, eff. April 19, 1957

7. Provision for a period of probation during which the industrial commissioner shall be directed to terminate an apprenticeship agreement at the request in writing of any party thereto. After the probationary period the industrial commissioner shall be empowered to terminate the registration of an apprentice upon agreement of the parties.
Subd 7 as last amended by L1961, C482, eff. October 1, 1961

8. Provision that the services of the industrial commissioner may be utilized for consultation regarding the settlement of differences arising out of the apprenticeship agreement where such differences cannot be adjusted locally or in accordance with the established trade procedure.
Subd 8 as last amended by L1961, C482, eff. October 1, 1961

9. Provision that if an employer is unable to fulfill his obligation under the apprenticeship agreement he may transfer such obligation to another employer.
Subd 9 as renumbered by L1957, C697, eff. April 19, 1957

10. Such additional standards as may be prescribed in accordance with the provisions of this article.
Subd 10 as renumbered by L1957, C697, eff. April 19, 1957

816. Apprenticeship agreements. For the purposes of this article an apprenticeship agreement is:

(1) An individual written agreement between an employer and an apprentice, or (2) a written agreement between an employer or an association of employers, and an organization of employees describing conditions of employment for apprentices or (3) a written statement describing conditions of employment for apprentices in a plant or plants where there is no bona fide employee organization.

816. formerly 815, as last renumbered and amended by L1961, C482, eff. October 1, 1961

817. Limitation. The provisions of this article shall apply to a person, firm, corporation or craft only after such person, firm, corporation or craft has voluntarily elected to conform with its provisions.

817, formerly 816, as renumbered by L1961, C482, eff. October 1, 1961

818. Separability. If any provision of this article or the application thereof to any person or circumstances, is held invalid, the remainder of the article, and the application of such provision to other persons and circumstances, shall not be affected thereby.

818, formerly 817, as renumbered by L1961, C482, eff. October 1, 1961

APPENDIX B

TRADES DECLARED APPRENTICEABLE
by the
New York State Apprenticeship and Training Council
With
Normal Term of Apprenticeship

CONSTRUCTION INDUSTRY AND ALLIED TRADES	No. of Years
Brick, Marble, and Cement Trades	
Bricklayer, Chimney	3
Bricklayer, Refractory	4
Bricklayer-Mason	3-4
Cement Finisher	3
Granite Cutter	3
Marble Bed Rubber	4
Marble Carver, Cutter and Setter	4
Marble Polisher	4
Stone Cutter (Building Trades)	4
Stone Mason	4
Stone Setter Mason	4
Bricklayer, Mason, Plasterer	4
Cleaners, Caulkers and Pointers	3
Woodworking Trades	
Carpenter	4
Millman	4
Plumbing and Heating Trades	
Asbestos Worker	4
Pipe Fitter	5
Pipe Fitter (Sprinkler Fitter)	5
Plumber	5
Plumber and Steamfitter	5
Steamfitter	5
Refrigeration and Air Conditioning Mechanic	5
Lead Burner	5
Interior Finishing Trades	
Lather, Metal	3
Lather, Metal and Wire	3
Lather, Wood	2
Lather, Wood, Wire and Metal	2-3
Painter and Decorator	3
Painter, Decorator and Paperhanger	3
Plasterer	3-4
Sheetmetal, Iron, and Roofing Trades	
Ornamental Iron Worker	3-4
Roofer	3-4

	No. of Years
Sheetmetal Worker	4
Iron Worker (Structural)	2-3
Tile, Glass, and Floor Covering Trades	
Glazier	3
Glazier, Stained Glass	4
Linoleum and Resilient Tile Layer	3-4
Linoleum, Resilient Tile and Carpet Layer or (Soft Tile and Carpet Layer)	3-4
Mosaic Worker	3
Terrazzo Worker	3
Tile Setter	3-4
Electrical Trades	
Electrical Lineman	4
Electrical Lineman (Telephone)	4
Electrician	4-5
Draftsman, Electrical	4
Electrician, Sign	5
Other Construction Trades	
Draftsman, Architectural	4
Draftsman, Structural	4
Operating Engineer, Universal Equipment	4
Operating Engineer, Grade and Paving Equipment	4
Operating Engineer, Plant Equipment	4
Operating Engineer, Heavy Duty Repairman	4
PRINTING INDUSTRY AND ALLIED TRADES	
Engraving and Composition Trades, except Lithographic	
Compositor (A)	4-6
Compositor (B)	4-6
Compositor (C)	6
Designer (Steel Plate Engraver)	4-5
Die Stamper Pressman	4
Electrotyper	6
Engraver and Die Cutter	4-5
Photo Engraver (also Gravure, Roto-Gravure)	5-6
Photo Engraver; Ben Day Artist (also Gravure)	5-6
Photo Engraver; Cylinder Grinder and Polisher (also Gravure)	5-6
Photo Engraver; Etcher (includes Printers) also Gravure)	5-6
Photo Engraver; Finisher and Engraver (also Gravure)	5-6
Photo Engraver; Stripper	5-6
Photo Engraver; Photographer (also Gravure)	5-6
Photo Engraver; Proofer	5-6
Photo Engraver; Retoucher (also Gravure)	5-6
Photo Engraver; Router (also Gravure)	5-6

	No. of Years
Photo Etcher (Steel Slate Engraver)	4
Picture Engraver (Steel Plate Engraver)	5-10
Print Roller Router	4
Router Engraver (Steel Plate Engraver)	4
Stereotyper	6
Plate Finisher (Burnisher-Alterationist)	4
Plate Finisher (Plater Hammerer)	4
Plate Finisher (Die Finisher)	6
Siderographer	7
Music Engraver	4
Die and Plate Prover	4
Plate Maker (Steel Plate Printing)	4
Engraver (Bank Note Script)	7
Engraver (Square Letter)	7
Electrotyper #2 (finisher)	6
Electrotyper #3 (molder)	6
Photo Engraver; General	6
Press Trades	
Commercial Pressman	4-5
Cylinder Press Assistant and Rotary Press Assistant	2½
Cylinder Pressman (10,000 Hours)	5
Cylinder Pressman (11,000 Hours)	5½
Job Press Assistant	2
Job Pressman (10,000 Hours)	5
Job Pressman (11,000 Hours)	5½
Newspaper (Web) Pressman	5
Paper Ruler	4
Plate Printer Pressman	4
Pressman	5
Printer Pressman (Wallpaper)	4
Assistant Pressman	3
Folding Box Letter Press Pressman	5
Folding Box Cutting and Creasing Pressman	4-5
Lithographic Grades	
Lithographic Artist	5
Lithographic Ben Day Artist	5
Lithographic Dot Etcher	5
Lithographic Photographer	5
Lithographic Platemaker	5
Lithographic Press Operator	4
Lithographic Pressman	4
Lithographic Stripper	5
Lithographic Transferer	5
Bindery Trades	
Bookbinder	2-4
Bookbinder, Edition	4
Bookbinder, Looseleaf	5
Bookbinder, Pamphlet	5

	No. of Years
Other Printing Trades	
Color Mixer (wallpaper or window shade cloth)	4
Mailer	5-6
Print Cutter (Wallpaper)	5
Printing Typecasting Machinist	4-6
Putter-On Sketch Maker	5
Folding Box Machine Adjuster (Maintenance Mechanic)	4
MACHINE TOOL, METAL MANUFACTURING INDUSTRIES AND ALLIED TRADES	
Tool and Die Trades	
Die Maker	4-5
Die Maker (Paper Goods)	4
Die Maker (Shoe)	4
Die Sinker	7
Ornamental Die Sinker	5
Pantograph Machine Die Sinker	4
Tool and Die Maker	4-5
Tool and Jig Builder	4-5
Toolmaker	4-5
Trimmer Die Maker	4
Other Machine Shop Trades	
Machinist	4
Maintenance Machinist	4-5
Metal Spinner (Custom)	4
Millwright	4
Custom Gear Maker	4
Roll Turner	4
Machine Tool Mechanic	3-4
Machinist (Automatic Screw Machine)	4
Primary Metal Trades	
Blacksmith	4
Boilermaker	4
Coremaker	4
Moldmaker	4
Molder	4
Molder and Coremaker	4
Molder and Finisher (Hat Block Die)	4
Patternmaker	5
Sheetmetal Worker (Iron Plate)	4
Other Metal Trades, etc.	
Aircraft Sheet Metal Worker	4
Beer Pump and Block Tin Plumber	5
Draftsman Mechanical (or Designer)	4
Hat Machine Mechanic	4

	No. of Years
Instrument Maker	4-5
Metal Plater (plates, hot dips)	3
Metal Polisher	3
Abrasive Laboratory Mechanic	4
Coopersmith	4
Heat Treater	4
Model Maker	4
OTHER MANUFACTURING INDUSTRIES TRADES	
Jewelry Manufacturing Trades	
Diamond Cutter	3
Diamond Setter	4
Diamond and Stone Setter	3½
Goldsmith	4
Jeweler (Hand Made)	3¾
Jeweler (Production)	2 3/4
Jewelry Caster	2½
Jewelry Polisher (or Mirror Lapper)	2 3/4
Press Hand (Jewelry)	2½
Silversmith	4
Toolmaker (Jewelry)	3
Crystal Cutter	3
Hub Cutter, Die Sinker (Jewelry)	4
Jewelry Moldmaker	3
Jewelry Chaser	2 3/4
Jewelry Engraver	2 3/4
Jewelry Lapper	3½
Model Maker (Jewelry)	4
Ring Faceteer	2½
Stone Setter (Jewelry)	3
Diamond Sawyer	3
Textile and Apparel Trades	
Card Fixer	3
Comb Fixer	3
Drawing Frame Fixer	3
Dyer (Textile)	3
Fur Cutter	2
Fur Finisher	2
Fur Nailer	2
Fur Operator	2
Garment Cutter (Men's Clothing)	2
Garment Cutter (Women's Clothing)	2
Jacquard Card Cutter	3
Jacquard Harness Tier	4
Jacquard Loom Fixer	4
Knitting Machine Fixer	4
Loom Fixer	4
Shoe Cutter (Hard Sole)	4

	No. of Years
Shoe Maker--Custom Orthepedic	4
Spinning Frame Fixer	3
Glove Cutter, Table (leather)	2
Textile Finisher (card tender)	3
Twister Frame Fixer	3
Wool Sorter	3
Shirt Cutter (Short Knife)	3
Electrical Manufacturing Trades	
Cable Splicer (Telephone)	4
Electronic Laboratory Technician (or Electronic Technician)	4
Woodworking Trades	
Boat Builder	4
Cabinetmaker	4
Cooper	3
Furniture Finisher (Painter)	3
Hand Wood Carver	4
Hat Block Carver	4
Patternmaker (Wood)	5
Ship Carpenter	4
Ship Jointer	4
Shipwright	4
Shipfitter	4
Stone, Clay, and Glass Manufacturing Trades	
Glass Blower	4-6½
Glass Engraver with Copper Wheels	4-6
Glass Engraver (Cut Glass)	4
Glass Equipment Mechanic	4
Melting Operator, Glass Furnace	3½
Optical Laboratory Technician	4
Optical Lens Grinder	4
Opto-Mechanical Technician	2
Pottery Kilnman	3
Pottery Presser and Caster	5
Sculptor	4
Stone Carver and Engraver	3
Precision Optics Polisher (Hand and Machine)	4
Grating Ruler (Optical Instrument Mechanic)	4
Flow Machine Operator	2
Granite Surface Plate Lapper	4
Other Manufacturing Trades	
Brewer	2
Brush Maker (Artist)	4
Draftsman Marine	4
Pipe Organ Building and Repairman	4
Prosthetic Appliance Mechanic	4

	No. of Years
Saddlemaker	3
Sailmaker	4
Harpmaker	4
Chemical Laboratory Technician	4
SERVICE AND REPAIR INDUSTRIES TRADES	
Automotive	
Auto Body Repairman and Painter	4
Auto Glass Installation Mechanic	2
Automobile Mechanic	4
Automotive Machinist	4
Bus Body Repairman (or Truck)	4
Bus Electrician (or Truck)	4
Bus Mechanic	4
Bus Refinisher (Painter) (or Truck)	4
Diesel Engine Mechanic	4
Farm Machinery and Equipment Mechanic	4
Industrial Truck Mechanic	4
Truck Mechanic	4
Railroad	
Blacksmith (Railroad)	4
Boilermaker (Railroad)	4
Carman (Car Inspector) (Railroad)	4
Electrician (Railroad)	4
Machinist (Railroad)	4
Sheetmetal (Railroad)	4
Aircraft Trades	
Aircraft Engine Mechanic	4
Aircraft and Engine Service Mechanic	4
Aircraft Instrument Mechanic	4
Airline Mechanic	4
Electrical Repair Trades	
Burglar Alarm Mechanic	4
Electric Motor Repairman	4
Elevator Electrician	4
Fire Alarm Mechanic	4
Maintenance Electrician	4
Radio Repairman	4
Radio and Television Repairman	4
Food Preparation Trades	
Baker	4
Baker (cake) (NYC only)	3
Cook (Chef)	3-4
Meat Cutter	2-3
Meat Cutter (Kosher)	3

Other Service and Repair Trades	No. of Years
Barber	2
Business Machine Mechanic	2½
Business Machine Mechanic (Opto-Duplicating)	2½
Commercial and Advertising Artist	5
Commercial Photographer	3
Commercial and Portrait Photographer	3
Dental Laboratory Technician	4
Elevator Mechanic	4
Gunsmith	4
Instrument Mechanic	4
Locksmith	4
Pipe Fitter (Maintenance)	4
Rose Grower	4
Scale Serviceman	3
Sewing Machine Mechanic	4
Signwriter and Pictorial Painter	4
Stained Glass Artist	4
Stationary Engineer	4
Tailor (Custom)	4
Upholsterer (Custom)	3-4
Watchmaker (Repairman)	4
Landscape Nurseryman	4
Maitenance Mechanic (Dry Cleaning and Laundry Equipment)	3
Dental Equipment Mechanic	4
Small Gas Engine and Equipment Mechanic	2
Appliance Serviceman	3
Photographic Equipment Technician	4

APPENDIX C

MACHINIST

WORK PROCESSES

Apprentices shall receive instruction and experience on the machines and processes listed in the following schedule:

		Approx. Hours
A.	Tool Crib Learning names of raw materials and names and uses of tools, jigs, fixtures, and gauges.	500
B.	Drills Power and Radial drilling, tapping, ream-lapping, counterboring and countersinking, grinding drills, lubricants, cutting, speeds and feeds, safety.	500
C.	Lathe - Engine Chucking, use of face plate, mandrel, steady rest and follow rest, centering, straight turning, facing taper turning with taper attachment, offset tail stock and compound, drilling, reaming, boring, buttoning, necking and recessing, filing, lapping, polishing, thread cutting, knurling, form turning, eccentric turning, tapping and spring winding, grinding lathe tools and centers, speeds and feeds, lubricants, safety.	1500
D.	Milling Machine Plain, vertical and universal. Selection of cutters, methods of holding work, vise, clamps, dividing head, circular table - plain or slab, milling, sawing, boring, fly cutter milling, vertical head, keyway cutting, slotting, spline milling, rack cutting, cutter milling, gear cutting, gang milling, form milling, speeds and feeds, lubricants, safety.	1000
E.	Shaper and Planer Methods of holding work, vise, clamps, dividing head, surface and angle cutting, keyway cutting, squaring, dovetailing, speeds and feeds, grinding tools, safety.	500
F.	Surface Grinder Safety, selection of grinding wheels, speeds and feeds, mounting wheels, magnetic chuck, dressing wheels, plain or surface grinding, angle grinding, squaring.	300

		Approx. Hours
G.	Universal Grinder Safety, mounting wheels, speeds and feeds, dressing wheels, straight, taper, angle face, form and hole grinding.	500
H.	Cutter Grinder Safety, mounting wheels, setting up indexing attachments, clearance angles for various types of cutters and reamers, setting up for these angles, grinding plain, spiral and end mills, reamers, form cutters.	600
I.	Heat Treatment Kinds of steel, S.A.E. Classification, how to harden, draw, case and pack harden and anneal, use of pyrometer and color chart, hardness tests (Brinnel & Rockwell), quenching baths, safety.	100
J.	Bench Work Filing, scraping, and chipping, layout and assembly, use of gauge blocks and dial indicator, vernier height gauge, lapping, tapping and threading, lubricants, inspection, safety.	500
K.	General Machinery Repair Inspection and adjusting, removing and replacing broken and worn parts of machine tools, scraping bearings and ways and rebuilding machines, welding.	2000
	TOTAL	8000

MACHINIST

RELATED INSTRUCTION

Safety (16 hours)
- Fundamentals (4 hours - first year)
- Trade Safety (12 hours - second year)

Industrial and Labor Relations (20 hours)
- History and Background (6 hours - first year)
- Current Laws and Practices (14 hours - second year)

Blueprint Reading, Drawings and Sketching
- Fundamentals of Blueprint Reading & Sketching
- Elementary Machine Blueprint Reading and Sketching
- Advanced Blueprint Reading & Sketching
- Machine and Die Design
- Tool, Jig,and Fixture Design

Mathematics
- Fundamentals
- Elementary Applications to the Trade
- Advanced Applications to the Trade
- Precision Measurement
- Using Handbooks, Tables, etc.
- Estimating

Trade Theory
- Tools, Machines,and Equipment
- Care, Maintenance,and Operation
- Terminology
- Materials of the Industry
- Technology of Jobs, Operations and Processes
- Layout and Production Methods

Trade Science
- Cutting Tools
- Abrasives
- Tool, Die, Jig,and Fixture Design
- Heat Treatment
- Metallurgy
- Welding

Other Related Courses as Necessary

144 Hours of Related Instruction are required for each apprentice for each year.

APPENDIX D

NEW YORK STATE DEPARTMENT OF LABOR
DIVISION OF RESEARCH AND STATISTICS
Albany, New York

RELATED INSTRUCTION FOR APPRENTICES REPORTED IN 1967 AS COMPLETING TRAINING

The aim of this study is to determine the extent to which the related instruction requirements of registered apprenticeship training have been met in actual practice.

The study found weaknesses in the recordkeeping and reporting systems which made it impossible in some cases to determine with certainty the extent of related instruction. The assumptions which the study made as to these cases are believed to be reasonable.

The study does not go into the question of the adequacy or relevance of related instruction.

Overall Findings

The study covers the 4,047 apprentices who satisfactorily completed their on-the-job training as registered apprentices, as reported in 1967 by the program sponsors to the apprentice-training representatives of the New York State Department of Labor.

Of the 4,047 apprentices, 41 percent had a record of satisfactory attendance at related classroom instruction. These included 77 percent of the 1,994 who requested and received completion certificates, but only 6 percent of the 2,053 for whom no certificates were requested or issued.

The other 23 percent of the 1,994 apprentices who received completion certificates presumably were excused in some or all years from the requirement for related instruction.

In the case of the 2,053 apprentices who did not receive completion certificates, the 94 percent who did not have satisfactory attendance records were made up of 675 for whom no related instruction record (form AT-706) was found in the files, and 1,256 for whom the record, while available, failed to show satisfactory attendance.

Attendance status	(A) Total		Completion certificate (B) issued		(C) not issued	
	Number	Percent	Number	Percent	Number	Percent
Total completing apprentices	4,047	100.0	1,994	100.0	2,053	100.0
Classroom attendance satisfactory	1,667	41.2	1,545	77.4	122	5.9
Classroom attendance satisfactory in some years, not in others	404	10.0	69	3.5	335	16.3
No record of satisfactory attendance	1,976	48.8	380	19.1	1,596	77.8

Column B of the table refers to those to whom a certificate of completion was issued. Unavailability of appropriate instruction in the locality was a common reason for excusing those without satisfactory classroom attendance. Other reasons given include "extenuating circumstances" and the request of the program's sponsor.

Circumstances that affect the availability of related instruction classes include:

Too few apprentices in a particular trade within travel distance of an educational center to form a class;

Lack of a system for successfully conducting related instruction classes for diversified apprentices throughout their full terms of apprenticeship;

Lack of qualified tradesmen or vocational teachers to conduct related instruction for a particular trade; and

Fluctuation in number of apprentices available for enrollment from certain trades from year to year, making planning for related classes difficult.

Column C refers to those completers to whom no certificate of completion was issued. Certificates are normally issued only on request, and the absence of a report of satisfactory classroom attendance for over nine-tenths of these trainees is in part explained by the fact that in some situations there was little interest in obtaining a completion certificate, and hence, in meeting the related instruction requirements for it. For example, four Joint Apprenticeship Committees in New York City (bricklayers, bookbinders, lithographers, and barbers), accounting for about 350 completers (about 17 percent of all completers without certificates), had no AT-706 prepared for their apprentices because there was no interest in obtaining certificates, or presumably in related instruction.

The tables in the appendix give detailed figures for the State as a whole and separately for the New York metropolitan area and for upstate, and for each of five industry categories. The industry and area data are summarized in the next section.

Industry and Area Differences

Nearly three-fourths of the completing apprentices were in the metropolitan area. However, the figures indicate much more interest in completion certificates upstate than in the metropolitan area. Certificates were issued to 73 percent of the 1,081 upstate completers, compared with 41 percent of the 2,966 in the metropolitan area.

Satisfactory related instruction was noted for half of the completers in the construction industry (who were three-fourths of all 1967 completers). The machine and metal group was not far behind:

Industry	Percent with satisfactory related instruction: New York State	Metropolitan area	Upstate area
All industries	41.2	41.1	41.5
Construction	49.0	48.1	53.8
Machine and metal manufacturing	40.4	12.5(a)	46.4
Other industries	10.4	5.9	17.1

A. This figure may not be significant, since only 64 apprentices were involved, compared with 302 upstate.

Satisfactory related instruction was rarer in other industries. In printing, in the upstate area, it was satisfactory for 18 percent of the completers (see data on page A-15). In the metropolitan area there was a satisfactory record for none of the completers in printing (see data on page A-9). Two factors help account for this difference: (1) as stated earlier, two large J.A.C.'s (lithographers and bookbinders) were not interested in meeting the related instruction requirement for a certificate, and no forms were prepared; and (2) one large program (compositors) was slow in reporting on 1967 and is not included in any of the figures; it is thought to have had about 125 completers.

In each of the five industry groups, the upstate programs showed a higher proportion of the completers having satisfactory related instruction than did the metropolitan area programs. The above table shows the same all-industries figure (about 41 percent) for both areas only because construction had the best record of related instruction, and construction accounted for a higher proportion of the completers in the metropolitan area (83 percent) than upstate (44 percent).

In the group that received certificates of completion, the relative availability of classroom instruction in the metropolitan area accounts for the fact that metropolitan completers with certificates were much more likely than upstate completers to have satisfactory related instruction. About 92 percent of them (out of 1,204 with certificates) were so reported, as against 56 percent upstate (out of 790 with certificates). Related instruction was not available in 2.5 percent of the metropolitan cases, while the comparable figure upstate was 34 percent. (Since they obtained certificates, these completers were presumably excused from related instruction.)

In the group that did not receive certificates, but for whom a record as to related instruction existed, 9 percent in the metropolitan area had satisfactory attendance, and 7 percent upstate. In both areas, classes were not available to nearly half the group that did not receive certificates.

Survey Method

As the report of findings above indicates, the basic source document of this study was form AT-706, the "Apprentice School Record." The official procedure for handling it in 1967 was, in brief, as follows:

When an apprentice is hired, a form AT-706 is prepared in triplicate by the New York State Department of Labor's apprentice training office for the district. All three copies are sent to the Department of Education, which returns the third copy, giving information as to whether related instruction is available, and if so, the school giving the instruction. The original and the second copy are retained by the Education Department, the original to record the apprentice's attendance and progress in class.

When the apprentice leaves the training program, either through completion of job training or because of termination prior to completion, the district apprentice training office notifies the Education Department, which then returns the original and the second copy of the AT-706; the original shows the apprentice's attendance and progress in related instruction up to the date of the return of the form.

Where the 1967 completers did not request completion certificates, the three copies of their AT-706 from should, according to the established procedure, be in the district apprentice training office, with the original copy showing his record of related instruction.

Where an official completion certificate is requested, the district office forwards the original copy of the AT-706 to the central office of the apprenticeship bureau. If it shows that the related instruction is approved or excused by the Education Department, a certificate is issued. Upon notice from the central office that a certificate was issued, the district apprentice training office destroys the second and third copies of the completer's AT-706. The original or first copy (with the apprentice's school record on it) is retained by the central office.

The official procedure apparently has not been followed in all cases. (1) One evidence is that AT-706's were found in some district offices with the notation that a completion certificate was issued. (2) Many carbon copies of the AT-706's were found with the apprentice's record of attendance and progress filled out. (This is presumably done only on the original by the Education Department.) (3) For apprentices in at least four large Joint Apprenticeship Committee programs, AT-706's were not filled out because there was no interest in completion certificates, as indicated earlier.

In this study all the central and district office AT-706 files were searched to match the names of the 4,047 completers reported in 1967. Wherever found, the original AT-706 was used. Where the original was not found, but a carbon copy appeared to contain the record of school attendance, the carbon was used.

The AT-706's for 675 of the 4,047 completers were not found, as the figures in the following table show. In addition, the item on the form showing the attendance record was left entirely blank in the cases of 1,231 other apprentices. (A blank in the attendance record item would be expected where related instruction was not available, or if the apprentice was not registered in school for other reasons.)

	Number	Percent
Total	4,047	100.0
Form AT-706 not found	675	16.7
Form AT-706 found	3,372	83.3
Attendance item on form entirely blank	1,231	30.4
Attendance item on form partially blank	254	6.3
Attendance item complete	1,887	46.6

Related instruction was available when the apprentice started his training in three cases out of five, as the following figures show:

	Number	Percent
Total	4,047	100.0
Related instruction currently available	2,430	60.0
Related instruction not currently available	1,617	40.0
Available later	21	0.5
Reported as not available	388	9.6
Item on form AT-706 was blank	533	13.2
Form AT-706 not found	675(a)	16.7

a. Includes about 350 completers in four J.A.C's in New York City where there was no interest in formal completion certificates.

The availability of related instruction at the beginning of apprenticeship was far greater for those completers who later received formal completion certificates than for those who did not. This is seen in the following figures, which are confined to the 3,372 completers for whom AT-706's were prepared:

	Certificate issued		Not issued	
	Number	Percent	Number	Percent
Total	1,994	100.0	1,378	100.0
Related instruction -				
Currently available	1,692	84.9	738	53.6
Not currently available	302	15.1	640	46.4

A followup search in the Education Department records for apprentices whose related instruction records were either missing or blank in the Labor Department records revealed no significant additional evidence of classroom attendance. Some additional data on why apprentices were excused from related instruction were uncovered (instruction originally thought to be available turned out to be not available, sponsor's request, etc.). In general, the thinking of the Education Department people involved in the program was that if there was no record of school attendance, it was not likely that the apprentice actually attended related instruction.

In the present study, the assumption therefore is made that related instruction took place only if the related instruction record existed, and there was a positive entry on the form.

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

A. New York State
1. All Trades

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	4,047	100.0	675	100.0	1,994	100.0	1,378	100.0
"Satisfactory" in all required years	1,667	41.2	-	-	1,545	77.4	122	8.9
Not "satisfactory" in all required years	2,380	58.8	675	100.0	449	22.6	1,256	91.1
All years "unsatisfactory"	70	1.7	-	-	2	0.1	68	4.9
"Satisfactory" in some years; "unsatisfactory" in others	150	3.7	-	-	8	0.4	142	10.3
"Satisfactory" in some years; blank in others	254	6.3	-	-	61	3.1	193	14.0
Record blank in all years	1,231	30.4	-	-	378	19.0	853	61.9
No related instruction record found	675	16.7	675	100.0	-	-	-	-
Availability of related instruction:								
Currently available	2,430	60.0	-	-	1,692	84.9	738	53.6
Not currently available	1,617	40.0	675	100.0	302	15.1	640	46.4
Available later	21	0.5	-	-	18	0.9	3	0.2
Not available	388	9.6	-	-	280	14.0	108	7.8
Not recorded	1,208	29.9	675	100.0	4	0.2	529	38.4

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

A. New York State
2. Construction

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	2,940	100.0	260	100.0	1,510	100.0	1,170	100.0
"Satisfactory" in all required years	1,442	49.0	-	-	1,329	88.0	113	9.7
Not "satisfactory" in all required years	1,498	51.0	260	100.0	181	12.0	1,057	90.3
All years "unsatisfactory"	62	2.1	-	-	-	-	62	5.3
"Satisfactory" in some years; "unsatisfactory" in others	145	4.9	-	-	4	0.3	141	12.1
"Satisfactory" in some years; blank in others	234	8.0	-	-	49	3.2	185	15.8
Record blank in all years	797	27.2	-	-	128	8.5	669	57.1
No related instruction record found	260	8.8	260	100.0	-	-	-	-
Availability of related instruction:								
Currently available	2,036	69.3	-	-	1,403	92.9	633	54.1
Not currently available	904	30.7	260	100.0	107	7.1	537	45.9
Available later	14	0.5	-	-	12	0.8	2	0.2
Not available	120	4.1	-	-	94	6.2	26	2.2
Not recorded	770	26.1	260	100.0	1	0.1	509	43.5

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

A. New York State
3. Printing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	276	100.0	158	100.0	75	100.0	43	100.0
"Satisfactory" in all required years	17	6.2	-	-	17	22.7	-	-
Not "satisfactory" in all required years	259	93.8	158	100.0	58	77.3	43	100.0
All years "unsatisfactory"	2	0.7	-	-	-	-	2	4.7
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	8	2.9	-	-	3	4.0	5	11.6
Record blank in all years	91	33.0	-	-	55	73.3	36	83.7
No related instruction record found	158	57.2	158	100.0	-	-	-	-
Availability of related instruction:								
Currently available	58	21.0	-	-	24	32.0	34	79.1
Not currently available	218	79.0	158	100.0	51	68.0	9	20.9
Available later	3	1.1	-	-	3	4.0	-	-
Not available	53	19.2	-	-	48	64.0	5	11.6
Not recorded	162	58.7	158	100.0	-	-	4	9.3

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

A. New York State
4. Machine and Metal Manufacturing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	366	100.0	56	100.0	226	100.0	84	100.0
"Satisfactory" in all required years	148	40.4	-	-	139	61.5	9	10.7
Not "satisfactory" in all required years	218	59.6	56	100.0	87	38.5	75	89.3
All years "unsatisfactory"	5	1.4	-	-	2	0.9	3	3.6
"Satisfactory" in some years; "unsatisfactory" in others	5	1.4	-	-	4	1.8	1	1.2
"Satisfactory" in some years; blank in others	8	2.2	-	-	5	2.2	3	3.6
Record blank in all years	144	39.3	-	-	76	33.6	68	80.9
No related instruction record found	56	15.3	56	100.0	-	-	-	-
Availability of related instruction:								
Currently available	224	61.2	-	-	191	84.5	33	39.3
Not currently available	142	38.8	56	100.0	35	15.5	51	60.7
Available later	3	0.8	-	-	2	0.9	1	1.2
Not available	80	21.9	-	-	32	14.2	48	57.1
Not recorded	59	16.1	56	100.0	1	0.4	2	2.4

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

A. New York State
5. Other Manufacturing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	72	100.0	22	100.0	15	100.0	35	100.0
"Satisfactory" in all required years	2	2.8	-	-	2	13.3	-	-
Not "satisfactory" in all required years	70	97.2	22	100.0	13	86.7	35	100.0
All years "unsatisfactory"	-	-	-	-	-	-	-	-
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	-	-	-	-	-	-	-	-
Record blank in all years	48	66.6	-	-	13	86.7	35	100.0
No related instruction record found	22	30.6	22	100.0	-	-	-	-
Availability of related instruction:								
Currently available	23	31.9	-	-	2	13.3	21	60.0
Not currently available	49	68.1	22	100.0	13	86.7	14	40.0
Available later	-	-	-	-	-	-	-	-
Not available	15	20.8	-	-	13	86.7	2	5.7
Not recorded	34	47.3	22	100.0	-	-	12	34.3

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

A. New York State
6. Service and Repair

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Issued		Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	393	100.0	179	100.0	168	100.0	46	100.0
"Satisfactory" in all required Years	58	14.8	-	-	58	34.5	-	-
Not "satisfactory" in all required years	335	85.2	179	100.0	110	65.5	46	100.0
All years "unsatisfactory"	1	0.3	-	-	-	-	1	2.2
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	4	1.0	-	-	4	2.4	-	-
Record blank in all years	151	38.4	-	-	106	63.1	45	97.8
No related instruction record found	179	45.5	179	100.0	-	-	-	-
Availability of related instruction:								
Currently available	89	22.6	-	-	72	42.9	17	37.0
Not currently available	304	77.4	179	100.0	96	57.1	29	63.0
Available later	1	0.3	-	-	1	0.6	-	-
Not available	120	30.5	-	-	93	55.3	27	58.7
Not recorded	183	46.6	179	100.0	2	1.2	2	4.3

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

B. Metropolitan Area
1. All trades

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	2,966	100.0	539	100.0	1,204	100.0	1,223	100.0
"Satisfactory" in all required years	1,218	41.1	-	-	1,107	92.0	111	9.1
Not "satisfactory" in all required years	1,748	58.9	539	100.0	97	8.0	1,112	90.9
All years "unsatisfactory"	60	2.0	-	-	1	0.1	59	4.8
"Satisfactory" in some years; "unsatisfactory" in others	137	4.6	-	-	3	0.2	134	11.0
"Satisfactory" in some years; blank in others	235	7.9	-	-	45	3.7	190	15.5
Record blank in all years	777	26.2	-	-	48	4.0	729	59.6
No related instruction record found	539	18.2	539	100.0	-	-	-	-
Availability of related instruction:								
Currently available	1,827	61.6	-	-	1,174	97.5	653	53.4
Not currently available	1,139	38.4	539	100.0	30	2.5	570	46.6
Available later	9	0.3	-	-	9	0.7	-	-
Not available	63	2.1	-	-	19	1.6	44	3.6
Not recorded	1,067	36.0	539	100.0	2	0.2	526	43.0

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

B. Metropolitan Area
2. Construction

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not Issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	2,460	100.0	220	100.0	1,135	100.0	1,105	100.0
"Satisfactory" in all required years	1,184	48.1	-	-	1,079	95.0	105	9.5
Not "satisfactory" in all required years	1,276	51.9	220	100.0	56	5.0	1,000	90.5
All years "unsatisfactory"	59	2.4	-	-	-	-	59	5.3
"Satisfactory" in some years; "unsatisfactory" in others	135	5.5	-	-	1	0.1	134	12.1
"Satisfactory" in some years; blank in others	219	8.9	-	-	36	3.2	183	16.6
Record blank in all years	643	26.2	-	-	19	1.7	624	56.5
No related instruction record found	220	8.9	220	100.0	-	-	-	-
Availability of related instruction:								
Currently available	1,703	69.2	-	-	1,122	98.9	581	52.6
Not currently available	757	30.8	220	100.0	13	1.1	524	47.4
Available later	6	0.2	-	-	6	0.5	-	-
Not available	23	0.9	-	-	6	0.5	17	1.5
Not recorded	728	29.7	220	100.0	1	0.1	507	45.9

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

B. Metropolitan Area
3. Printing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	181	100.0	136	100.0	7	100.0	38	100.0
"Satisfactory" in all required years	-	-	-	-	-	-	-	-
Not "satisfactory" in all required years	181	100.0	136	100.0	7	100.0	38	100.0
All years "unsatisfactory"	-	-	-	-	-	-	-	-
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	6	3.3	-	-	1	14.3	5	13.2
Record blank in all years	39	21.5	-	-	6	85.7	33	86.8
No related instruction record found	136	75.2	136	100.0	-	-	-	-
Availability of related instruction:								
Currently available	33	18.2	-	-	1	14.3	32	84.2
Not currently available	148	81.8	136	100.0	6	85.7	6	15.8
Available later	3	1.7	-	-	3	42.9	-	-
Not Available	5	2.8	-	-	3	42.8	2	5.3
Not recorded	140	77.3	136	100.0	-	-	4	10.5

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Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

B. Metropolitan Area
4. Machine and Metal Manufacturing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	64	100.0	14	100.0	19	100.0	31	100.0
"Satisfactory" in all required years	8	12.5	-	-	2	10.5	6	19.4
Not "satisfactory" in all required years	56	87.5	14	100.0	17	89.5	25	80.6
All years "unsatisfactory"	1	1.6	-	-	1	5.3	-	-
"Satisfactory" in some years; "unsatisfactory" in others	2	3.1	-	-	2	10.5	-	-
"Satisfactory" in some years; blank in others	6	9.4	-	-	4	21.1	2	6.5
Record blank in all years	33	51.5	-	-	10	52.6	23	74.1
No related instruction record found	14	21.9	14	100.0	-	-	-	-
Availability of related instruction:								
Currently available	33	51.6	-	-	18	94.7	15	48.4
Not currently available	31	48.4	14	100.0	1	5.3	16	51.6
Available later	-	-	-	-	-	-	-	-
Not available	16	25.0	-	-	1	5.3	15	48.4
Not recorded	15	23.4	14	100.0	-	-	1	3.2

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

B. Metropolitan Area
5. Other Manufacturing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not Issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	56	100.0	19	100.0	4	100.0	33	100.0
"Satisfactory" in all required years	-	-	-	-	-	-	-	-
Not "satisfactory" in all required years	56	100.0	19	100.0	4	100.0	33	100.0
All years "unsatisfactory"	-	-	-	-	-	-	-	-
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	-	-	-	-	-	-	-	-
Record blank in all years	37	66.1	-	-	4	100.0	33	100.0
No related instruction record found	19	33.9	19	100.0	-	-	-	-
Availability of related instruction:								
Currently available	19	33.9	-	-	-	-	19	57.6
Not currently available	37	66.1	19	100.0	4	100.0	14	42.4
Available later	-	-	-	-	-	-	-	-
Not available	6	10.7	-	-	4	100.0	2	6.1
Not recorded	31	55.4	19	100.0	-	-	12	36.3

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

B. Metropolitan Area
6. Service and Repair

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	205	100.0	150	100.0	39	100.0	16	100.0
"Satisfactory" in all required years	26	12.7	-	-	26	66.6	-	-
Not "satisfactory" in all required years	179	87.3	150	100.0	13	33.4	16	100.0
All years "unsatisfactory"	-	-	-	-	-	-	-	-
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	4	2.0	-	-	4	10.3	-	-
Record blank in all years	25	12.2	-	-	9	23.1	16	100.0
No related instruction record found	150	73.1	150	100.0	-	-	-	-
Availability of related instruction:								
Currently available	39	19.0	-	-	33	84.6	6	37.5
Not currently available	166	81.0	150	100.0	6	15.4	10	62.5
Available later	-	-	-	-	-	-	-	-
Not available	13	6.3	-	-	5	12.8	8	50.0
Not recorded	153	74.7	150	100.0	1	2.6	2	12.5

Apprentices Reported in 1967 as Completing Training, by Record of Attendnace at Related Instruction

C. Upstate Area
1. All Trades

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	1,081	100.0	136	100.0	790	100.0	155	100.0
"Satisfactory" in all required years	449	41.5	-	-	438	55.5	11	7.1
Not "satisfactory" in all required years	632	58.5	136	100.0	352	44.5	144	92.9
All years "unsatisfactory"	10	0.9	-	-	1	0.1	9	5.8
"Satisfactory" in some years; "unsatisfactory" in others	13	1.2	-	-	5	0.6	8	5.2
"Satisfactory" in some years; blank in others	19	1.8	-	-	16	2.0	3	1.9
Record blank in all years	454	42.0	-	-	330	41.8	124	80.0
No related instruction record found	136	12.6	136	100.0	-	-	-	-
Availability of related instruction:								
Currently available	603	55.8	-	-	518	65.6	85	54.8
Not currently available	478	44.2	136	100.0	272	34.4	70	45.2
Available later	12	1.1	-	-	9	1.1	3	1.9
Not available	325	30.1	-	-	261	33.0	64	41.4
Not recorded	141	13.0	136	100.0	2	0.3	3	1.9

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

C. Upstate Area
2. Construction

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	480	100.0	40	100.0	375	100.0	65	100.0
"Satisfactory" in all required years	258	53.8	-	-	250	66.6	8	12.3
Not "satisfactory" in all required years	222	46.2	40	100.0	125	33.4	57	87.7
All years "unsatisfactory"	3	0.6	-	-	-	-	3	4.6
"Satisfactory" in some years; "unsatisfactory" in others	10	2.1	-	-	3	0.8	7	10.8
"Satisfactory" in some years; blank in others	15	3.1	-	-	13	3.5	2	3.1
Record blank in all years	154	32.1	-	-	109	29.1	45	69.2
No related instruction record found	40	8.3	40	100.0	-	-	-	-
Availability of related instruction:								
Currently available	333	69.4	-	-	281	74.9	53	80.0
Not currently available	147	30.6	40	100.0	94	25.1	13	20.0
Available later	8	1.7	-	-	6	1.6	2	3.1
Not available	97	20.1	-	-	88	23.5	9	13.8
Not recorded	42	8.8	40	100.0	-	-	2	3.1

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

C. Upstate Area
3. Printing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	95	100.0	22	100.0	68	100.0	5	100.0
"Satisfactory" in all required years	17	17.9	-	-	17	25.0	-	-
Not "satisfactory" in all required years	78	82.1	22	100.0	51	75.0	5	100.0
All years "unsatisfactory"	2	2.1	-	-	-	-	2	40.0
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	2	2.1	-	-	2	2.9	-	-
Record blank in all years	52	54.7	-	-	49	72.1	3	60.0
No related instruction record found	22	23.2	22	100.0	-	-	-	-
Availability of related instruction:								
Currently available	25	26.3	-	-	23	33.8	2	40.0
Not currently available	70	73.7	22	100.0	45	66.2	3	60.0
Available later	-	-	-	-	-	-	-	-
Not available	48	50.5	-	-	45	66.2	3	60.0
Not recorded	22	23.2	22	100.0	-	-	-	-

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

C. Upstate Area
4. Machine and Metal Manufacturing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	302	100.0	42	100.0	207	100.0	53	100.0
"Satisfactory" in all required years	140	46.4	-	-	137	66.1	3	5.7
Not "satisfactory" in all required years	162	53.6	42	100.0	70	33.9	50	94.3
All years "unsatisfactory"	4	1.3	-	-	1	0.5	3	5.7
"Satisfactory" in some years; "unsatisfactory" in others	3	1.0	-	-	2	1.0	1	1.9
"Satisfactory" in some years; blank in others	2	0.7	-	-	1	0.5	1	1.9
Record blank in all years	111	36.7	-	-	66	31.9	45	84.8
No related instruction record found	42	13.9	42	100.0	-	-	-	-
Availability of related instruction:								
Currently available	191	63.2	-	-	173	83.6	18	34.0
Not currently available	111	36.8	42	100.0	34	16.4	35	66.0
Available later	3	1.0	-	-	2	1.0	1	1.9
Not available	64	21.2	-	-	31	14.9	33	62.2
Not recorded	44	14.6	42	100.0	1	0.5	1	1.9

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

C. Upstate Area
5. Other Manufacturing

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	16	100.0	3	100.0	11	100.0	2	100.0
"Satisfactory" in all required years	2	12.5	-	-	2	18.2	-	-
Not "satisfactory" in all required years	14	87.5	3	100.0	9	81.8	2	100.0
All years "unsatisfactory"	-	-	-	-	-	-	-	-
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	-	-	-	-	-	-	-	-
Record blank in all years	11	68.7	-	-	9	81.8	2	100.0
No related instruction record found	3	18.8	3	100.0	-	-	-	-
Availability of related instruction:								
Currently available	4	25.0	-	-	2	18.2	2	100.0
Not currently available	12	75.0	3	100.0	9	81.8	-	-
Available later	-	-	-	-	-	-	-	-
Not available	9	56.2	-	-	9	81.8	-	-
Not recorded	3	18.8	3	100.0	-	-	-	-

Apprentices Reported in 1967 as Completing Training, by Record of Attendance at Related Instruction

C. Upstate Area
6. Service and Repair

Attendance at related instruction	Total		Record of related instruction not found (AT-706)		Completion certificate: Issued		Completion certificate: Not issued	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	188	100.0	29.0	100.0	129	100.0	30	100.0
"Satisfactory" in all required years	32	17.0	-	-	32	24.8	-	-
Not "satisfactory" in all required years	156	83.0	29.0	100.0	97	75.2	30	100.0
All years "unsatisfactory"	1	0.5	-	-	-	-	1	3.3
"Satisfactory" in some years; "unsatisfactory" in others	-	-	-	-	-	-	-	-
"Satisfactory" in some years; blank in others	-	-	-	-	-	-	-	-
Record blank in all years	126	67.1	-	-	97	75.2	29	96.7
No related instruction record found	29	15.4	29.0	100.0	-	-	-	-
Availability of related instruction:								
Currently available	50	26.6	-	-	39	30.2	11	36.7
Not currently available	138	73.4	29.0	100.0	90	69.8	19	63.3
Available later	1	0.5	-	-	1	0.8	-	-
Not available	107	56.9	-	-	88	68.2	19	63.3
Not recorded	30	16.0	29.0	100.0	1	0.8	-	-